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PANASONIC CT-20SL15 SERVICE MANUAL

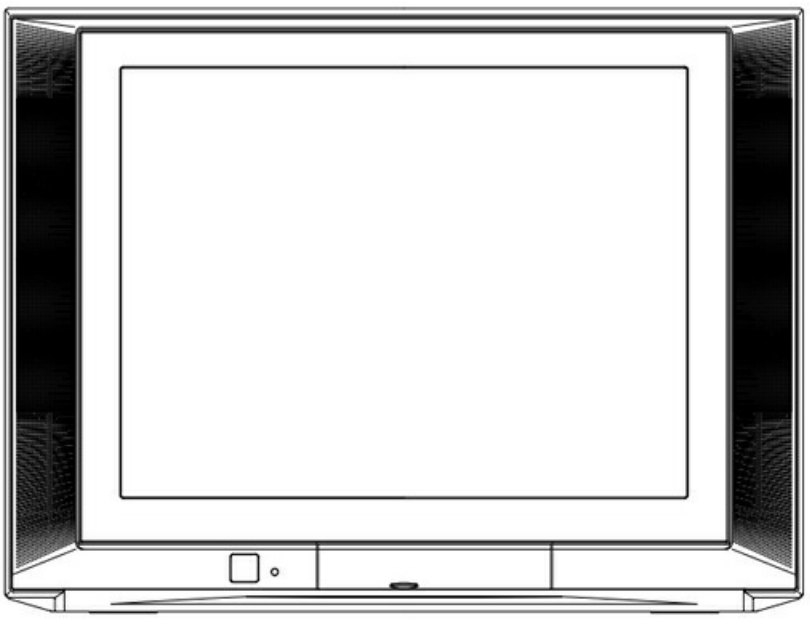

Table of Contents

Table of Contents
Important Safety Notice
Service Notes
About lead free solder (PbF)
GENERAL SPECIFICATIONS
DISASSEMBLY INSTRUCTIONS
REMOVAL OF ANODE CAP
NOTE FOR THE REMOVAL OF THE MAIN PCB
SERVICE MODE LIST
CONFIRMATION OF HOURS USED
WHEN REPLACING EEPROM (MEMORY) IC
ELECTRICAL ADJUSTMENTS
BLOCK DIAGRAM
PRINTED CIRCUIT BOARDS MAIN/CRT
MICON
CHROMA
DEFLECTION
SOUND
COMB FILTER/AV
CRT
WAVEFORMS
MECHANICAL EXPLODED VIEW
MECHANICAL REPLACEMENT PARTS LIST
ELECTRICAL REPLACEMENT PARTS LIST
Other ManualsLib Projects

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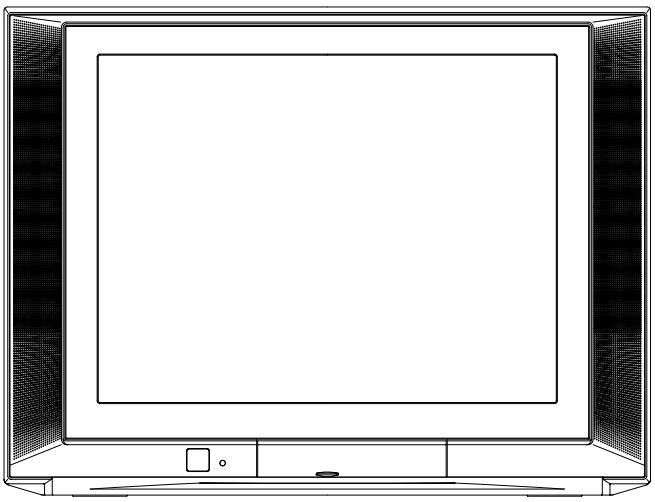
Service Manual

Color Television

Main Manual



Panasonic

Models	Chassis
CT-20SL15	CME022A

This service manual is issued as a service guide for the model listed above.
Included in this manual are a set of schematic, block diagrams, functional descriptions, alignment procedures, disassembly procedures and a complete parts list.

"**WARNING!** This Service Manual is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. **Products powered by electricity should be serviced or repaired only by experienced professional technicians.** Any attempt to service or repair the product or products dealt with in this Service Manual by anyone else could result in serious injury or death."

The service technician is required to read and follow the **"Safety Precautions" and "Important Safety Notice"** in this Main Manual.

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CONTENTS

CONTENTS A1-1
Important Safety Notice A2-1
Service Notes A2-2, A2-3
About lead free solder (PbF) A2-4
GENERAL SPECIFICATIONS ..... A3-1~A3-5
DISASSEMBLY INSTRUCTIONS
1. REMOVAL OF ANODE CAP B-1
2. NOTE FOR THE REMOVAL OF THE MAIN PCB B-1
SERVICE MODE LIST C-1
CONFIRMATION OF HOURS USED C-1
WHEN REPLACING EEPROM (MEMORY) IC C-1
ELECTRICAL ADJUSTMENTS ..... D-1~D-5
BLOCK DIAGRAM E-1, E-2
PRINTED CIRCUIT BOARDS
MAIN/CRT ..... F-1~F-4
SCHEMATIC DIAGRAMS
MICON G-1, G-2
CHROMA G-3, G-4
DEFLECTION G-5, G-6
POWER G-7, G-8
SOUND G-9, G-10
TUNER/STEREO G-11, G-12
COMB FILTER/AV G-13, G-14
CRT G-15, G-16
VOLTAGE LIST H-1, H-2
WAVEFORMS I-1, I-2
MECHANICAL EXPLODED VIEW J-1
MECHANICAL REPLACEMENT PARTS LIST K1-1
ELECTRICAL REPLACEMENT PARTS LIST ..... K2-1~K2-4

Important Safety Notice

Special components are used in this television set which are important for safety. These parts are identified on the schematic diagram by the symbol ⚠ and printed in **BOLD TYPE** on the replacement part list. It is essential that these critical parts are replaced with the manufacturer's specified replacement part to prevent X-ray radiation, shock, fire or other hazards. Do not modify the original design without the manufacturer's permission.

Safety Precautions

General Guidelines

An **Isolation Transformer** should always be used during the servicing of a receiver whose chassis is not isolated from AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect the Receiver from being damaged by accidental shorting that may occur during servicing.

When servicing, observe the original lead dress, especially in the high voltage circuit. Replace all damaged parts (also parts that show signs of overheating.)

Always Replace Protective Devices, such as fishpaper, isolation resistors and capacitors, and shields after servicing the Receiver. Use only manufacturer's recommended rating for fuses, circuits breakers, etc.

High potentials are present when this Receiver is operating. Operation of the Receiver without the rear cover introduces danger for electrical shock. Servicing should not be performed by anyone who is not thoroughly familiar with the necessary precautions when servicing high-voltage equipment.

Extreme care should be practiced when **Handling the Picture Tube.** Rough handling may cause it to implode due to atmospheric pressure. (14.7 lbs per sq. in.). Do not nick or scratch the glass or subject it to any undue pressure. When handling, use safety goggles and heavy gloves for protection. **Discharge the picture tube** by shorting the anode to chassis ground (not to the cabinet or to other mounting hardware). When discharging connect cold ground (i.e. dag ground lead) to the anode with a well insulated wire or use a grounding probe.

Avoid prolonged exposure at close range to unshielded areas of the picture tube to prevent exposure to X-ray radiation.

The **Test Picture Tube** used for servicing the chassis at the bench should incorporate safety glass and magnetic shielding. The safety glass provide shielding for the tube viewing area against X-ray radiation as well as implosion. The magnetic shield limits the X-ray radiation around the bell of the picture tube in addition to the restricting magnetic effects. When using a picture tube test jig for service, ensure that the jig is capable of handling **50kV** without causing X-ray radiation.

Before returning a serviced receiver to the owner, the service technician must thoroughly test the unit to ensure that is completely safe to operate. **Do not use a line isolation transformer when testing.**

Leakage Current Cold Check

Unplug the AC cord and connect a jumper between the two plug prongs.

Measure the resistance between the jumpered AC plug and expose metallic parts such as screwheads, antenna terminals, control shafts, etc. If the exposed metallic part has a return path to the chassis, the reading should be between 240kΩ and 5.2MΩ. If the exposed metallic part does not have a return path to the chassis, the reading should be infinite.

Leakage Current Hot Check (Fig. 1)

Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during the check.

Connect a 1.5kΩ 10 watt resistor in parallel with a 0.15µF capacitor between an exposed metallic part and ground. Use earth ground, for example a water pipe.

Using a DVM with a 1000 ohms/volt sensitivity or higher, measure the AC potential across the resistor.

Repeat the procedure and measure the voltage present with all other exposed metallic parts.

Verify that any potential does not exceed 0.75 volt RMS. A leakage current tester (such a Simpson Model 229, Sencore Model PR57 or equivalent) may be used in the above procedure, in which case any current measure must not exceed 0.5 milliamp. If any measurement is out of the specified limits, there is a possibility of a shock hazard and the Receiver must be repaired and rechecked before it is returned to the customer.

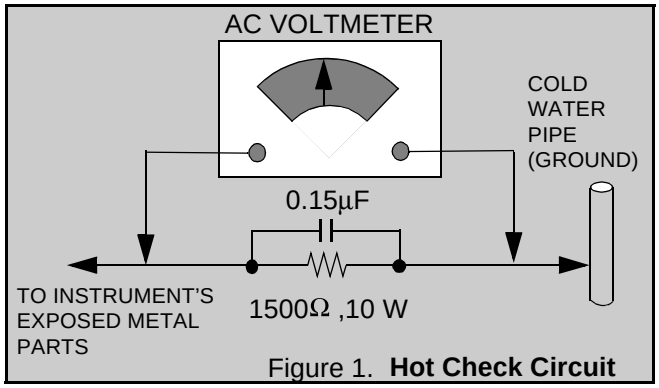


Figure 1. **Hot Check Circuit**

X-ray Radiation

WARNING: The potential source of X-ray radiation in the TV set is in the High Voltage section and the picture

Note: *It is important to use an accurate, calibrated high voltage meter.*

Set the **brightness and picture** controls to Minimum. Measure the High Voltage. The high voltage should be **30.0 ± 1.5kV.** If the upper limit is out of tolerance, immediate service and correction is required to insure safe operation and to prevent the possibility of premature component failure.

Service Notes

Note: These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.

Leadless Chip Component (surface mount)

Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chips capacitor or resistor board solder pads may have holes through the board, however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitor may also be limited for the same reason. It is recommended that identical components be used.

Chip resistor has a three digit numerical resistance code - 1st and 2nd significant digits and a multiplier.

Example: 162 = 1600 or 1.6kΩ resistor, 0 = 0Ω (jumper).

Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.

Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.

Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either common anode or common cathode. Check the parts list for correct diode number.

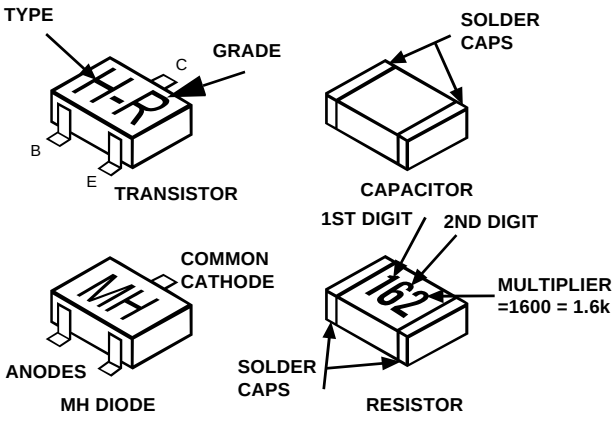
Component Removal

1. Use solder wick to remove solder from component end caps or terminal.
2. Without pulling up, carefully twist the component with tweezers to break the adhesive.
3. Do not reuse removed leadless or chip components since they are subject to stress fracture during removal.

Chip Component Installation

1. Put a small amount of solder on the board soldering pads.
2. Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt iron until solder flows. Do not apply heat for more than 3 seconds.

Chip Components

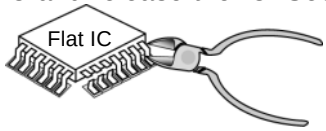


How to Replace Flat-IC

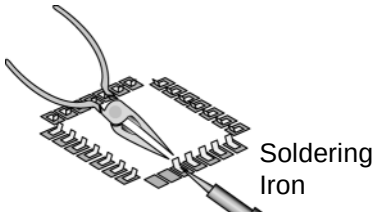
- Required Tools -

- Soldering iron
- Needle nose pliers
- Wire cutters (sharp & small)
- De-solder braids
- Magnifier

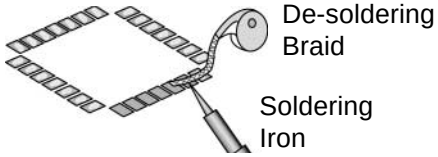
1. Cut the pins of a defective IC with wire cutters. Remove IC from board. If IC is glued to the board, heat the IC and release the IC. See Note above.



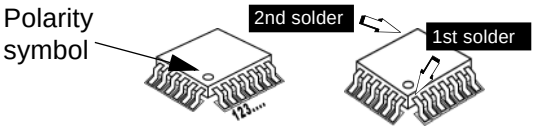
2. Using soldering iron and needle nose pliers remove the IC pins from the board.



3. Using de-soldering braid and soldering iron remove solder from affected are on board (pads).

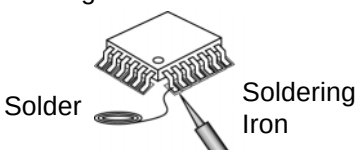


4. Position the new Flat-IC in place (apply the pins of the Flat-IC to the soldering pads where the pins need to be soldered). Determine the positions of the soldering pads and pins by correctly aligning the polarity symbol. Solder pin #1 first, align the IC.

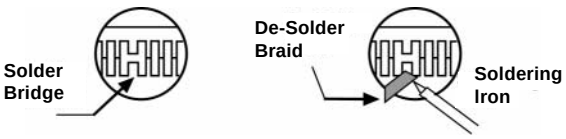


Solder the pin opposite to pin #1. This will assist positioning the IC.

5. Solder all pins to the soldering pads using a fine tipped soldering iron.



6. Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de-solder braid as shown in the figure below.



Service Notes (Continued)

IMPORTANT: To protect against possible damage to the solid state devices due to arcing or static discharge, make certain that all ground wires and CRT DAG wire are securely connected.

CAUTION: The power supply circuit is above earth ground and the chassis cannot be polarized. Use an isolation transformer when servicing the Receiver to avoid damage to the test equipment or to the chassis. Connect the test equipment to the proper ground (⏚) or (⏚) when servicing, or incorrect voltages will be measured.

WARNING: This Receiver has been designed to meet or exceed applicable safety and X-ray radiation protection as specified by government agencies and independent testing laboratories.

To maintain original product safety design standards relative to X-ray radiation and shock and fire hazard, parts indicated with the symbol ⚠ on the schematic must be replaced with identical parts. Order parts from the manufacturer's parts center using the parts numbers shown in this service manual, or provide the chassis number and the part reference number.

For optimum performance and reliability, all other parts should be replaced with components of identical specification.

About lead free solder (PbF)

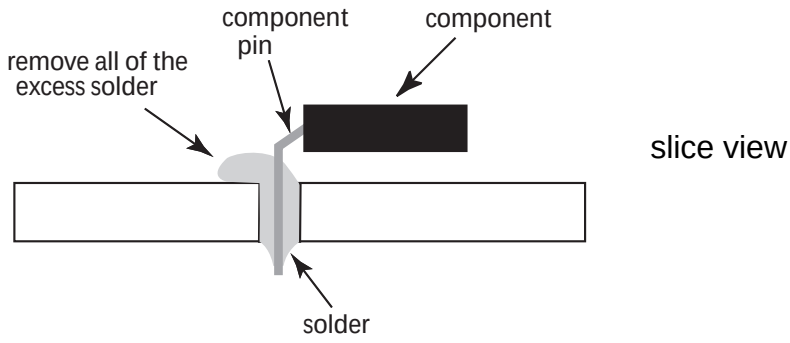
Note: Lead is listed as (Pb) in the periodic table of elements.
In the information below, Pb will refer to Lead solder, and PbF will refer to Lead Free Solder.
The Lead Free Solder used in our manufacturing process and discussed below is Sn(Tin)+Ag(Silver) + Cu(Copper).

This model uses Pb Free solder in it's manufacture due to environmental conservation issues.

PCBs manufactured using lead free solder will have the PbF within a leaf Symbol PbF stamped on the front of PCB.

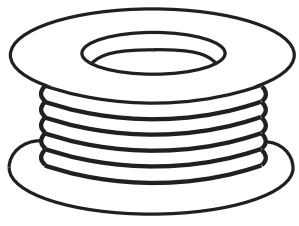
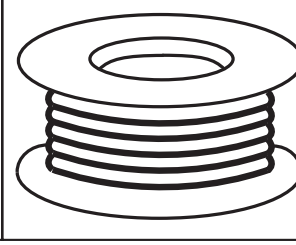
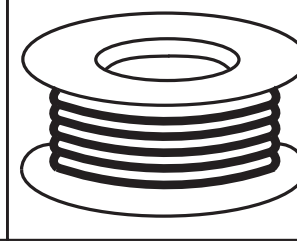
Caution

- Pb free solder has a higher melting point than standard solder. Typically the melting point is 30 ~ 40 °C higher. Please use a high temperature soldering iron and set it to 350 ± 5°C.
- Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C). If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If this is not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.
- After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side. (see figure below)



Suggested Pb free solder

There are several kinds of Pb free solder available for purchase. Although, this product can be used only Sn+Ag+Cu(tin, silver, copper) solder

0.3mm X 100g	0.6mm X 100g	1.0mm X 100g
		

GENERAL SPECIFICATIONS

G-1	**TV System**	CRT	CRT Size / Visual Size	20 inch / 508mmV
			CRT Type	Flat
			Magnetic Field BV/BH	+0.45G/0.18G
		Color System		NTSC
		Speaker		2 Speaker
			Position	Front Side
			Size	2 x 4.7 Inch
			Impedance	8 ohm
		Sound Output	MAX	2.5+2.5 W
			10%(Typical)	- W
		NTSC3.58+4.43 /PAL60Hz		No
G-2	**Tuning System**	Broadcasting System		US System M
		Tuner and Receive CH	System	1Tuner
			Destination	USA(W/ CABLE)
			CH Coverage	2 - 69, 4A, A-5 - A-1, A - I, J - W, W+1 - W+84
		Intermediate Frequency	Picture(FP)	45.75MHz
			Sound(FS)	41.25MHz
			FP-FS	4.50MHz
		Preset CH		No
		Stereo/Dual TV Sound		Yes
		Tuner Sound Muting		Yes
G-3	**Power**	Power Source	AC	120V AC 60Hz
			DC	
		Power Consumption	at AC	
				105 W at AC 120 V 60 Hz
			Stand by (at AC)	3 W at AC 120 V 60 Hz
			Per Year	-- kWh/Year
		Protector	Power Fuse	Yes
			Safety Circuit	Yes
			IC Protector(Micro Fuse)	No
G-4	**Regulation**		Safety	UL/CSA
			Radiation	FCC/IC
			X-Radiation	DHHS/HWC
G-5	**Temperature**		Operation	0oC ~ +40oC
			Storage	-20oC ~ +60oC
G-6	**Operating Humidity**			Less than 80% RH

GENERAL SPECIFICATIONS

G-7	**On Screen Display**	Menu			Yes	
			Menu Type		Icon	
			Picture		Yes	
				Normal	Yes	
				Contrast	Yes	
				Brightness	Yes	
				Color	Yes	
				Tint	Yes	
				Sharpness	Yes	
			Timer		Yes	
				Sleep	Yes	
				On/Off Timer		No
			Sound		Yes	
				Bass		No
				Treble		No
				Balance		No
				BBE On/Off		No
				Stable Sound On/Off		No
				Surround On/Off		No
				AI Sound	Yes	
			Set Up		Yes	
				Language	Yes	
				TV/Cable	Yes	
				Auto CH Memory	Yes	
				Add/ Delete	Yes	
				Closed Caption	Yes	
			Lock		Yes	
				V-Chip	Yes	
				Canada V-Chip	Yes	
				CH Label		No
				Favorite CH		No
				Game Guard (Video Lock)	Yes	
				Parental Guidance (CH Lock)	Yes	
				Color Stream DVD/DTV		No
			Control Level		Yes	
				Volume	Yes	
				Brightness	Yes	
				Contrast	Yes	
				Color	Yes	
				Tint	Yes	
				Sharpness	Yes	
				Tuning		No
				Bass		No
				Treble		No
				Balance		No
				Back Light		No
			Stereo,Audio Output,SAP		Yes	
			Video		Yes	
			Component		Yes	
			Channel(TV/Cable)		Yes	
			CH Label			No
			Game Timer			No
			Sleep Timer		Yes	
			Sound Mute		Yes	
			V-chip Rating		Yes	
			16: 9			No
G-8	**OSD Language**				English	French Spanish
G-9	**Clock and Timer**	Sleep Timer		Max Time	120 Min	
				Step	10 Min	
		On/Off Timer		Program(On Timer / Off Timer / Clock)		No
		Wake Up Timer				No
		Timer Back-up (at Power Off Mode)		more than	-- Min	Sec

GENERAL SPECIFICATIONS

G-10	**Remote Control**	Unit		RC-LH
		Glow in Dark Remocon		No
		Back light Remocon		Yes
		Format		Matsushita
		Remocon Format		Kaseikyo
		Custom Code		08-00 h
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-3(AA) x 2 pcs
		Total Keys		38 Keys
		Keys	Power	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			100	No
			CH Up	Yes
			CH Down	Yes
			Volume Up	Yes
			Volume Down	Yes
			Cap/Text(TV/Caption/Text)	No
			1/2(CH1/CH2)	No
			TV/Video(TV/AV)	Yes
			CH RTN(Quick View)	Yes
			Sleep	No
			RECall(Call)	Yes
			Reset	No
			Menu/Enter	Yes
			Mute	Yes
			Exit	Yes
			MTS(Audio Select)	Yes
			Fav.Up	No
			Fav.Down	No
			16: 9	No
		Multi Brand Keys	CH Up(VCR)	Yes
			CH Down(VCR)	Yes
			Pause/Still	Yes
			TV/VCR(VCR)	Yes
			Guide	Yes
			Prog	Yes
			FF	Yes
			Rew	Yes
			Rec	Yes
			Play	Yes
			Stop	Yes
			TV	Yes
			VCR	Yes
			Cable	Yes
			DVD	Yes
			CODE	No
			DVD MENU <	No
			DVD MENU >	No
			DVD CLEAR	No
			TOP MENU	No
			DVD MENU	Yes

GENERAL SPECIFICATIONS

G-11	**Features**	Auto Degauss		Yes
		Auto Shut Off		Yes
		Canal+		No
		Cable		Yes
		Anti-theft		No
		Rental		No
		Memory(Last CH)		Yes
		Memory(Last Volume)		Yes
		V-Chip		Yes
			Type	USA,CANADA Type
		BBE		No
		Auto Search		No
		CH Allocation		No
		SAP		Yes
		Just Clock Function		No
		CH Label		No
		VM Circuit		No
		Full OSD		No
		Premiere		No
		Comb Filter		Yes 2 Lines
		Auto CH Memory		Yes
		Hotel Lock		No
		Closed Caption		Yes
		AI Sound		Yes
		FBT Leak Test Protect		Yes
		Parental Guidance (CH Lock)		Yes
		Game Guard (Video Lock)		Yes
		Game Timer (Max Time:120 Min)		No
		Energy Star		No
		Favorite CH		No
		Surround		No
		Power On Memory		No
		16:9 Mode		No
G-12	**Accessories**	Owner's Manual	Language	English/French/Spanish
			W/ Warranty	Yes
		Remote Control Unit		Yes
		Rod Antenna		No
			Poles	
			Terminal	
		Loop Antenna		No
			Terminal	-
		U/V Mixer		No
		DC Car Cord (Center+)		No
		Guarantee Card		No
		Warning Sheet		No
		Circuit Diagram		No
		Antenna Change Plug		No
		Service Station List		No
		Important Safety Instruction		No
		Dew/AHC Caution Sheet		No
		AC Plug Adapter		No
		Quick Set-up Sheet		No
		Battery		Yes
			UM size x pcs	UM-3 x 2
			OEM Brand	No
		AC Cord		No
		AV Cord (2Pin-1Pin)		No
		Registration Card (NDL Card)		Yes
		PTB Sheet		No
		ESP Card		No
		300 ohm to 75 ohm Antenna Adapter		No
		Customer Care Card		No

GENERAL SPECIFICATIONS

G-13	**Interface**	Switch	Front	Power	Yes
				System Select	No
				Main Power SW	No
				Sub Power	No
				Channel Up	Yes
				Channel Down	Yes
				Volume Up	Yes
				Volume Down	Yes
			Rear	AC/DC	No
				TV/CATV Selector	No
				Degauss	No
				Main Power SW	No
		Indicator		Power	No
				Stand-by	No
				On Timer	No
		Terminals	Front	Video Input = VIDEO2	RCA
				Audio Input = VIDEO2	RCA x 2
				Other Terminal	No
			Rear	Video Input(Rear1) = VIDEO1	RCA
				Video Input(Rear2) = VIDEO2	No
				Audio Input(Rear1) = VIDEO1	RCA x 2
				Audio Input(Rear2) = VIDEO2	No
				Video Output	No
				Audio Output	No
				Euro Scart	No
				Component	RCA x 3
				S Input	Yes
				Diversity	No
				Ext Speaker	No
				DC Jack 12V(Center +)	No
				VHF/UHF Antenna Input	F Type
				AC Outlet	No
G-14	**Set Size**			Approx. W x D x H (mm)	590 x 494.5 x 446.5
G-15	**Weight**			Net (Approx.)	23 kg (50.6 lbs)
				Gross (Approx.)	26.5 kg (58.3 lbs)
G-16	**Carton**		Master Carton		No
				Content	---- Sets
				Material	-- /--
				Dimensions W x D x H(mm)	-- x -- x --
				Description of Origin	No
			Gift Box	Material	Double/Brown
				Dimensions W x D x H(mm)	695 x 575 x 549
				Design	As per Buyer's
				Description of Origin	Yes
			Drop Test		Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces
				Height (cm)	46
			Container Stuffing		272 Sets/40' container
G-17	**Cabinet Material**		Cabinet	Cabinet Front	PS 94V0 NONDECABROM
				Cabinet Rear	PS 94V0 NONDECABROM
			PCB	Non-Halogen Demand	No
				Eyelet Demand	Yes
G-18	**Environment**		Environmental standard requirement (by buyer)		Green procurement of MATSUSHITA
				Pb-free	Phase3(Phase3A)

DISASSEMBLY INSTRUCTIONS

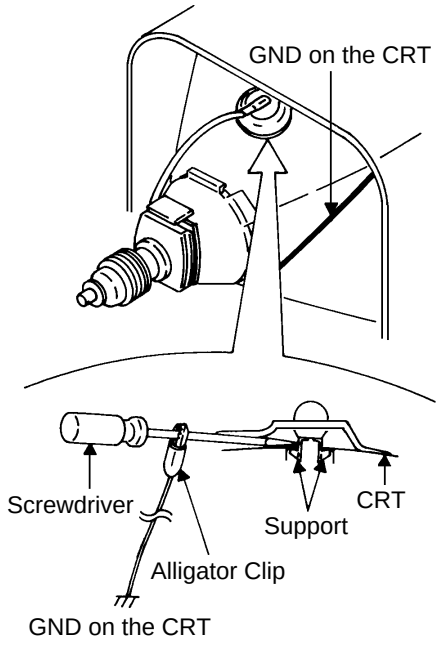
1. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

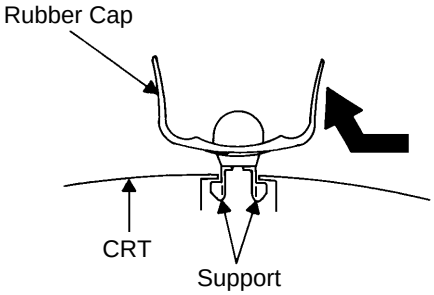
* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

1. Follow the steps as follows to discharge the Anode Cap.
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.



2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support.



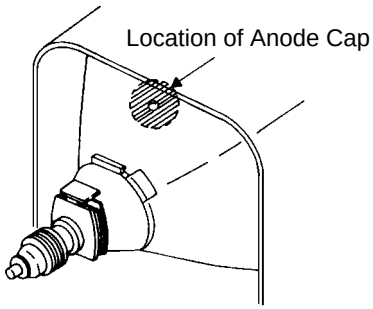
3. After one side is removed, pull in the opposite direction to remove the other.

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

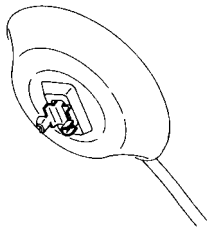
1. Clean the spot where the cap was located with a small amount of alcohol.



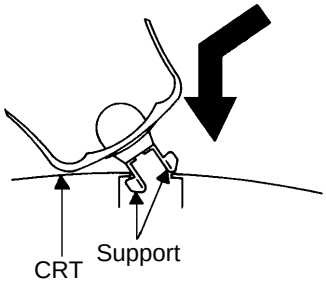
NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap.



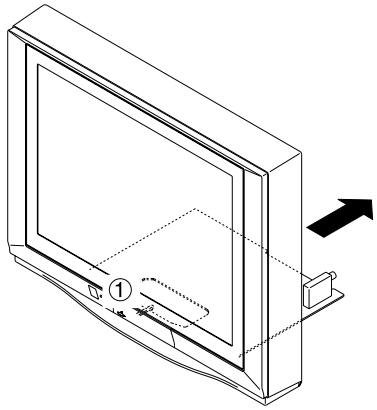
4. Insert one end of the Anode Support into the anode button, then the other as shown in the figure below.



5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

2. NOTE FOR THE REMOVAL OF THE MAIN PCB

When the removal of the Main PCB, remove the hook ① first, then draw it in the direction of the arrow.



SERVICE MODE LIST

This unit is provided with the following SERVICE MODES so you can repair, examine and adjust easily.
To enter to the Service Mode, press both set key and remote control key for more than 2 seconds.

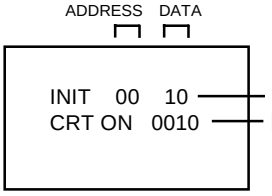
Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	Initialization of factory data. NOTE: Do not use this for normal servicing. If you set factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
VOL. (-) MIN	6	POWER ON total hours is displayed on the screen. Refer to the "CONFIRMATION OF HOURS USED". Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

CONFIRMATION OF HOURS USED

POWER ON total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds.
3. After the confirmation of using hours, turn off the power.



Initial setting content of MEMORY IC.
POWER ON total hours.
= (16 x 16 x 16 x thousands digit value)
+ (16 x 16 x hundreds digit value)
+ (16 x tens digit value)
+ (ones digit value)

FIG. 1

WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

NOTE: No need to set data position INI 20~5F due to the adjustment value.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	10	B8	0A	45	5A	B3	24	B4	B5	A8	0A	04	40	40	40	7F
10	50	00	73	00	01	00	00	00	3F	0F	0D	E3	95	07	45	00
60	5F	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds. ADDRESS and DATA should appear as FIG 1.
3. ADDRESS is now selected and should "blink". Using the CH. UP/DOWN button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press VOL. UP to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using CH. UP/DOWN button until required DATA value has been selected.
6. Pressing VOL. UP will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input. **After the data input, set to the initializing of shipping.**
9. Turn POWER on.
10. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 1 second.
11. After the finishing of the initializing of shipping, the unit will turn off automatically.

The unit will now have the correct DATA for the new MEMORY IC.

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor with a heat sink, apply silicon grease on the contact section of the heat sink. Before applying new silicon grease **(YG6260M)** , remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

Prepare the following measurement tools for electrical adjustments.

1. Oscilloscope
2. Digital Voltmeter
3. Multi-sound Generator
4. Pattern Generator

On-Screen Display Adjustment

1. In the condition of NO indication on the screen. Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control for more than 2 seconds to appear the adjustment mode on the screen as shown in **Fig. 1-1**.

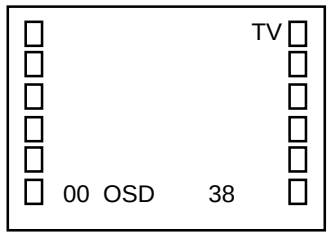


Fig. 1-1

2. Use the Channel UP/DOWN button or Channel button **(0-9)** on the remote control to select the options shown in **Fig. 1-2**.
3. Press the MENU button on the remote control to end the adjustments.

NO.	FUNCTION	NO.	FUNCTION
00	OSD H	19	CONTRAST CENT
01	CUT OFF	20	CONTRAST MIN
02	H. VCO	21	COLOR MAX
03	H. PHASE	22	COLOR CENTER
04	AFC GAIN	23	COLOR MIN
05	V. SHIFT	24	TINT
06	H. SIZE	25	SHARP. MAX
07	V. SIZE	26	SHARP. CENT
08	V. LINERITY	27	SHARP. MIN
09	VS CORRECTION	28	CB DL
10	R DRIVE	29	CR DL
11	B DRIVE	30	CB PED
12	R. BIAS	31	CR PED
13	G. BIAS	32	PARABOLA
14	B. BIAS	33	CORNER
15	BRIGHT MAX	34	TRAPWZIUM
16	BRIGHT CENT	35	LEVEL
17	BRIGHT MIN	36	SEPARATION1
18	CONTRAST MAX	37	SEPARATION2

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: CONSTANT VOLTAGE

1. Place the set in AV MODE without signal.
2. Connect the digital voltmeter to the **TP001**.
3. Adjust the **VR502** until the digital voltmeter is 115 ± 0.5V.

2-2: CUT OFF

1. Place the set in Aging Test for more than 15 minutes.
2. Place the set in AV MODE without signal.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select “CUT OFF”.
5. Adjust the **Screen Volume** until a dim raster is obtained.

2-3: WHITE BALANCE, WHITE BALANCE CS

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set in Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator with Burst On.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(12)** on the remote control to select “R. BIAS”.
5. Press the CH. UP/DOWN button on the remote control to select the “R. BIAS”, “G. BIAS”, “B. BIAS”, “B. DRIVE” or “R. DRIVE”.
6. Adjust the VOL. UP/DOWN button on the remote control to whiten the R. BIAS, G. BIAS, B. BIAS, B. DRIVE and R. DRIVE at each step tone sections equally.
7. Perform the above adjustments 5 and 6 until the white color is achieved.
8. Press the TV/VIDEO button on the remote control to set to the CS mode.
9. Receive the gray scale pattern from the Pattern Generat or with Brust On.
10. If the picture is too much green.Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(30)** on the remote control to select “CB PED”.
11. Adjust the VOL. UP/DOWN button on the remote control to select the step up.
12. If the picture is too much red. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(31)** on the remote control to select “CR PED”.
13. Adjust the VOL. UP/DOWN button on the remote control to select the step down.

2-4: FOCUS

1. Receive a broadcast.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

2-5: HORIZONTAL PHASE

1. Receive the center cross signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select “H.PHASE”.
4. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

ELECTRICAL ADJUSTMENTS

2-6: OSD POSITION

1. Activate the adjustment mode display of **Fig. 1-1**.
2. Press the VOL. UP/DOWN button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-1)**

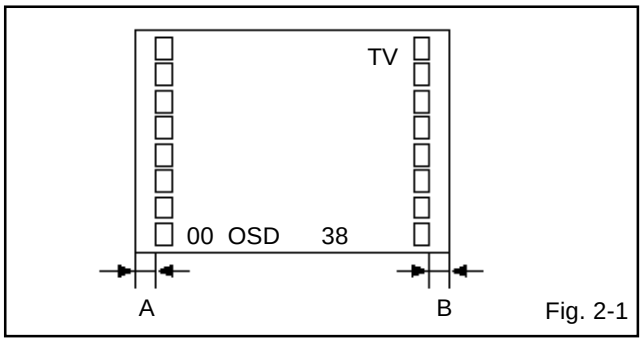


Fig. 2-1

2-7: VERTICAL SIZE

1. Receive the cross hatch signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(07)** on the remote control to select “V. SIZE”.
4. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes 9 ± 2%.

2-8: VERTICAL LINEARITY

NOTE: Adjust after performing adjustments in section 2-6. After the adjustment of Vertical Linearity, reconfirm the Vertical Position and Vertical Size adjustments.

1. Receive the cross hatch signal from the Pattern Generator.
2. Using the remote control, set the brightness, contrast, to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(08)** on the remote control to select “V. LINERITY”.
4. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

2-9: LEVEL

1. Connect the AC voltmeter to **pin 6 of CP101**.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(35)** on the remote control to select “LEVEL”.
3. Press the VOL. UP/DOWN button on the remote control until the AC voltmeter is 85 ± 2mV.

2-10: CONTRAST MAX

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(18)** on the remote control to select “CONTRAST MAX”.
2. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes “70”.
3. Receive a broadcast and check if the picture is normal.
4. Press the TV/VIDEO button on the remote control to set to the AV mode. Then perform the above adjustments 1~3.
5. Press the TV/VIDEO button on the remote control to set to the CS mode. Then perform the above adjustments 1~3.

2-11: SEPARATION 1, 2

Please do the method (1) or method (2) adjustment.

Method (1)

1. Set the multi-sound signal generator for each different L-ch and R-ch frequency (Ex. L-ch=2KHz, R-ch=400Hz) and receive the RF.
2. Connect the oscilloscope to the **pin 6 and pin 7 of CP101**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(36)** on the remote control to select “SEPARATION 1”.
4. Press the VOL. UP/DOWN button on the remote control to adjust it until the audio output wave becomes a fine sine wave.
5. Press the CH UP button once the set to “SEPARATION 2” mode. Then perform the above adjustment 4.

Method (2)

1. Set the multi-sound signal generator L-ch=1KHz, R-ch =Non input and receive the RF.
2. Connect the oscilloscope to the **pin 6 of CP101**.
3. Press the AUDIO SELECT button on the remote control to set to the stereo mode.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(36)** on the remote control to select “SEPARATION 1”.
5. Press the VOL. UP/DOWN button on the remote control to adjust it until the R-ch output becomes minimum.
6. Set the multi-sound signal generator L-ch=Non input, R-ch=1KHz and receive the RF.
7. Connect the oscilloscope to the **pin 7 of CP101**.
8. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(37)** on the remote control to select “SEPARATION 2”.
9. Press the VOL. UP/DOWN button on the remote control to adjust it until the L-ch output becomes minimum. The output difference of the between with Filter and without Filter should be more than 25db for both L and R.

2-12: VERTICAL POSITION

1. Receive the center cross signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Adjust the **VR401** until the horizontal line becomes fit to the notch of the shadow mask. **(Refer to Fig. 2-2)**

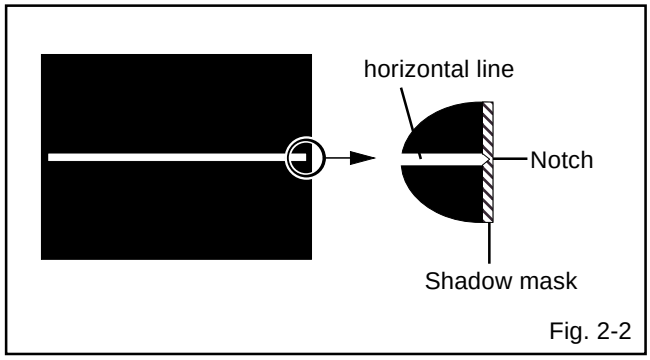


Fig. 2-2

ELECTRICAL ADJUSTMENTS

2-13: BRIGHT CENT

1. Receive the black pattern*. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(16)** on the remote control to select "BRIGHT CENT".
4. Press the VOL. UP/DOWN button on the remote control until the white 10% is starting to be visible.
5. Receive the black pattern*. (Audio Video Input)
6. Press the TV/VIDEO button on the remote control to set to the AV mode. Then perform the above adjustments 2~4.
7. Press the TV/VIDEO button on the remote control to set to the CS mode.
8. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(16)** on the remote control to select "BRIGHT CENT".
9. Press the VOL. UP/DOWN button on the remote control until the brightness step No. becomes "80".

*The Black Pattern means the whole black raster signal. Select the "RASTER" of the pattern generator, set to the OFF position for each R, G and B.

2-14: COLOR CENT

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast, color and tint to normal position.
3. Connect the oscilloscope to **TP022**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(22)** on the remote control to select "COLOR CENT".
5. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
6. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 110 ± 5% of the white level. **(Refer to Fig. 2-3)**
7. Receive the video color bar pattern. (Audio Video Input)
8. Set to the AV mode. Then perform the above adjustments 2~6.
9. Press the TV/VIDEO button on the remote control to set to the CS mode. Then perform the above adjustments 2~4.
10. Press the VOL. UP/DOWN button on the remote control until the color step No. becomes "65".

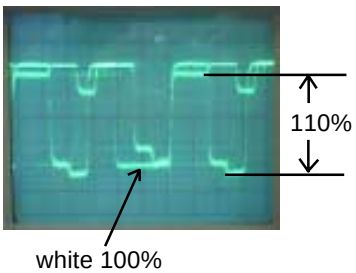


Fig. 2-3

2-15: TINT

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast, color and tint to normal position.
3. Connect the oscilloscope to **TP024**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(24)** on the remote control to select "TINT".
5. Press the VOL. UP/DOWN button on the remote control until the section "A" becomes as straight line. **(Refer to Fig. 2-4)**
6. Receive the video color bar pattern. (Audio Video Input)
7. Set to the AV mode. Then perform the above adjustments 2~5.
8. Press the TV/VIDEO button on the remote control to set to the CS mode. Then perform the above adjustments 2~4.
9. Press the VOL. UP/DOWN button on the remote control until the tint step No. becomes "52".

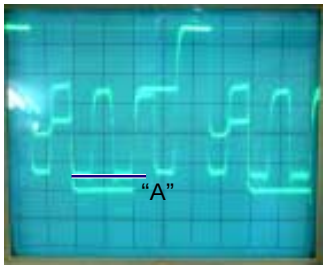


Fig. 2-4

2-16: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of the each adjustment items are set correctly referring below.

NO.	FUNCTION	RF	AV	CS
02	H.VCO	03	03	03
04	AFC GAIN	07	07	07
05	V.SHIFT	02	02	02
06	H.SIZE	40	40	40
09	VS CORRECTION	28	28	28
15	BRIGHT MAX	120	120	120
17	BRIGHT MIN	50	50	50
19	CONTRAST CENT	50	50	50
20	CONTRAST MIN	18	18	18
21	COLOR MAX	90	90	90
23	COLOR MIN	00	00	00
25	SHARP.MAX	63	63	63
26	SHARP.CENT	43	40	40
27	SHARP.MIN	00	00	00
28	CB DL	00	00	00
29	CR DL	00	00	00
32	PARABOLA	25	25	25
33	CORNER	32	32	32
34	TRAPEZIUM	41	41	41

ELECTRICAL ADJUSTMENTS

3. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 3-1)**
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar genera-
2. tor.
   Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends
3. are equally wide.
   Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen
4. is green.
5. Confirm red and blue color.
   Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

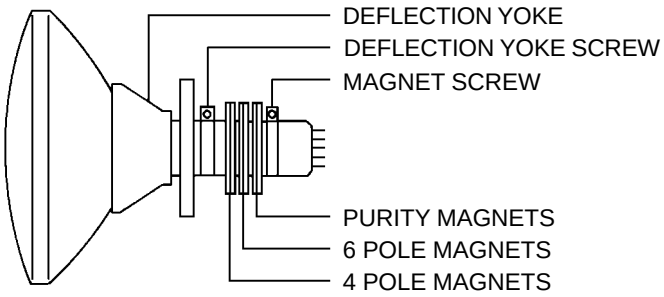


Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

3-4: DYNAMIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 3-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 3-2-b)**

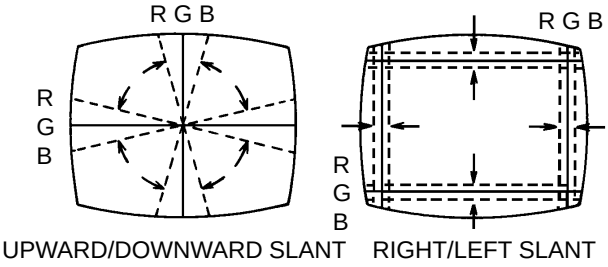


Fig. 3-2-a

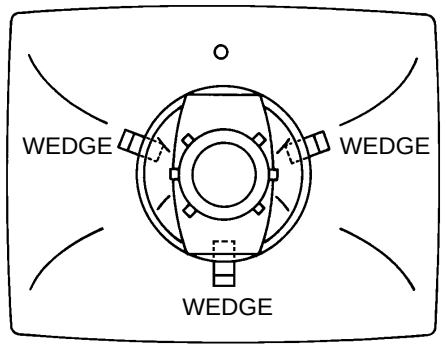
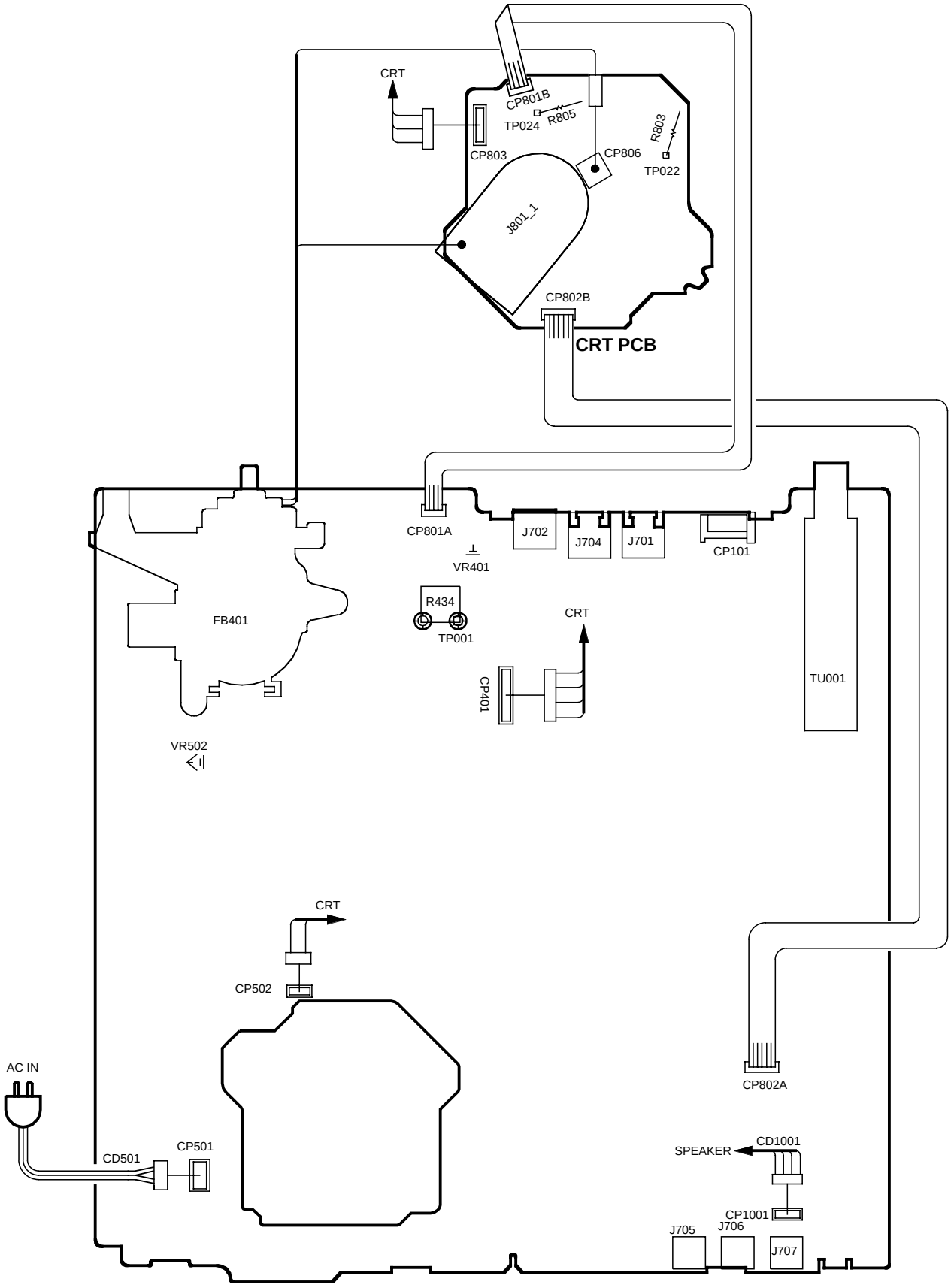


Fig. 3-2-b

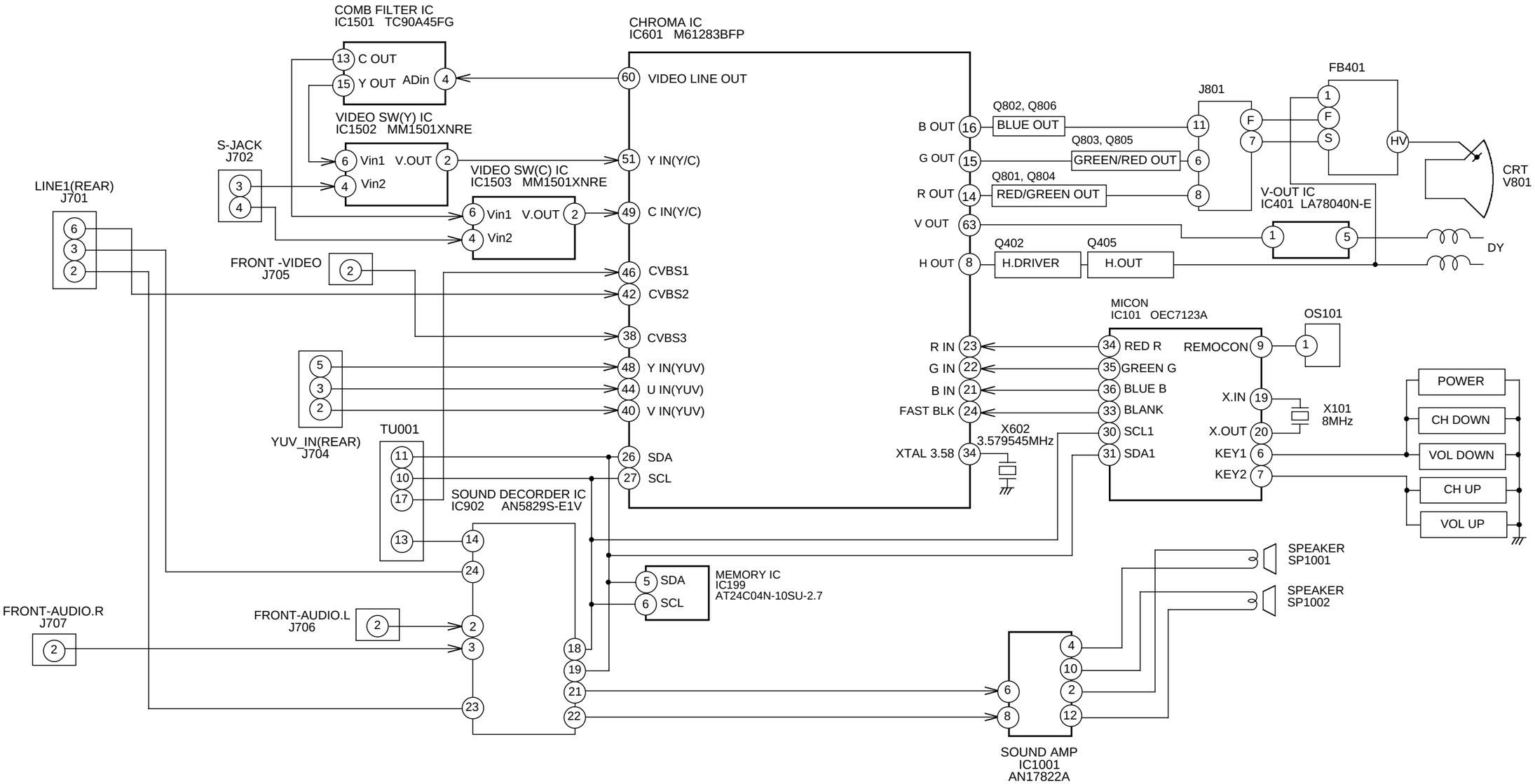
ELECTRICAL ADJUSTMENTS

4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)

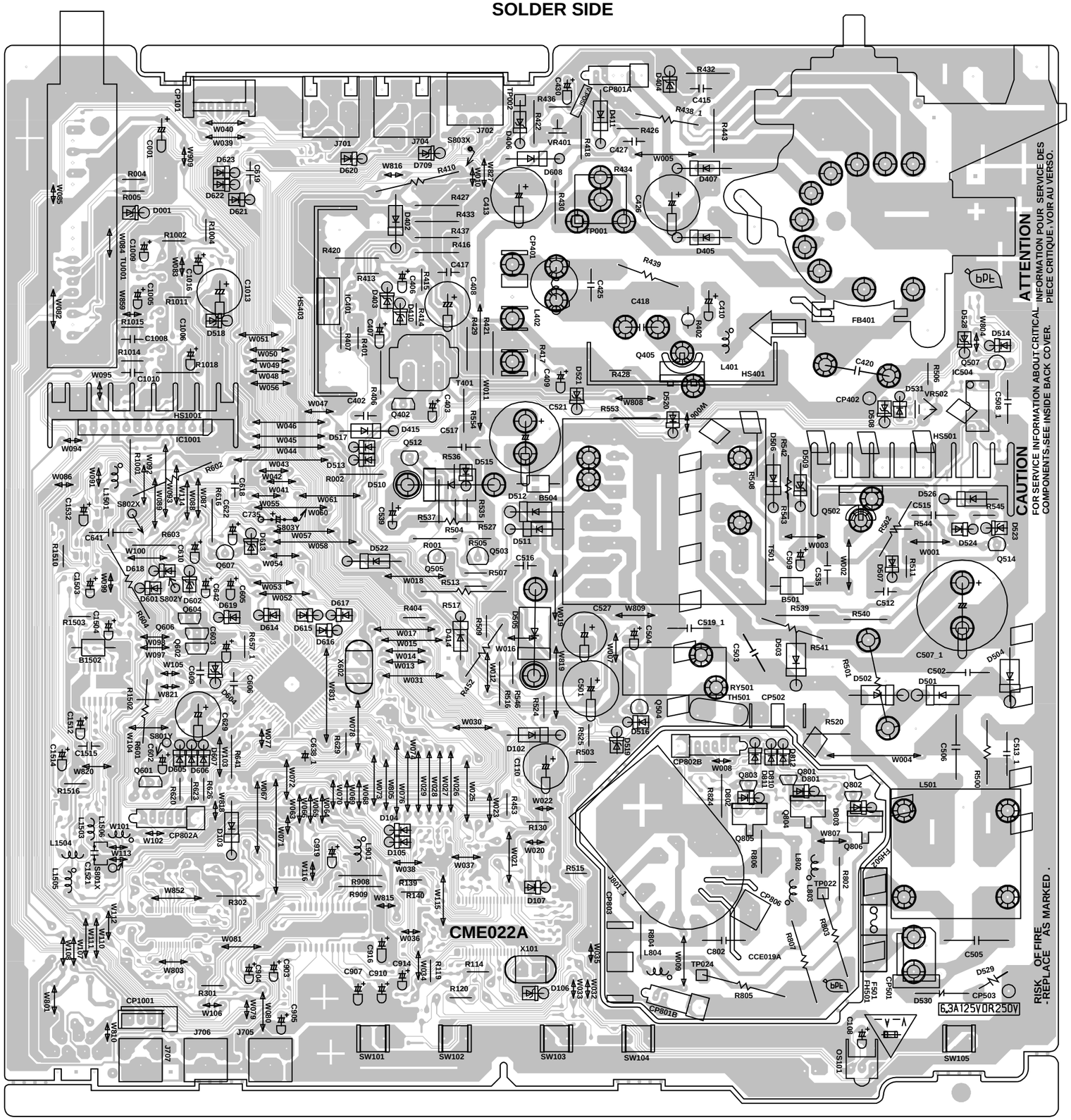


MAIN PCB

BLOCK DIAGRAM



PRINTED CIRCUIT BOARDS
MAIN/CRT (INSERTED PARTS)
SOLDER SIDE


CME022A
ATTENTION
FOR SERVICE INFORMATION ABOUT CRITICAL COMPONENTS,SEE INSIDE BACK COVER.
INFORMATION POUR SERVICE DES PIECE CRITIQUE, VOIR AU VERSO.
CAUTION
RISK OF FIRE -REPLACE AS MARKED .
6.3A125VOR250V
CP101
CP1001
CP401
CP801A
CP801B
CP802A
CP802B
CP803
CP806
CP402
CP501
CP502
CP503
TP001
TP002
TP022
TP024
J701
J702
J704
J705
J706
J707
S802X
S802Y
S803X
S803Y
S801X
SW101
SW102
SW103
SW104
SW105
X101
X602
FB401
HS401
HS403
HS501
HS1001
IC1001
IC401
IC504
L401
L402
L501
L802
L803
L1501
L1503
L1504
L1505
L1506
T401
T501
VR401
VR502
RY501
TH501
B501
B504
B1502
FH501
FH502
OS101
D001
D102
D104
D105
D106
D107
D401
D402
D403
D404
D405
D407
D408
D411
D414
D415
D501
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D623
D801
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D807
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D809
D810
D811
D812
D813
D814
Q202
Q402
Q405
Q502
Q503
Q504
Q505
Q506
Q507
Q512
Q514
Q601
Q602
Q603
Q604
Q606
Q607
Q801
Q802
Q803
Q804
Q805
Q806
R001
R002
R004
R005
R1002
R1004
R1011
R1014
R1015
R1018
R1501
R1502
R1503
R1504
R1510
R1516
R1520
R1521
W085
W086
W087
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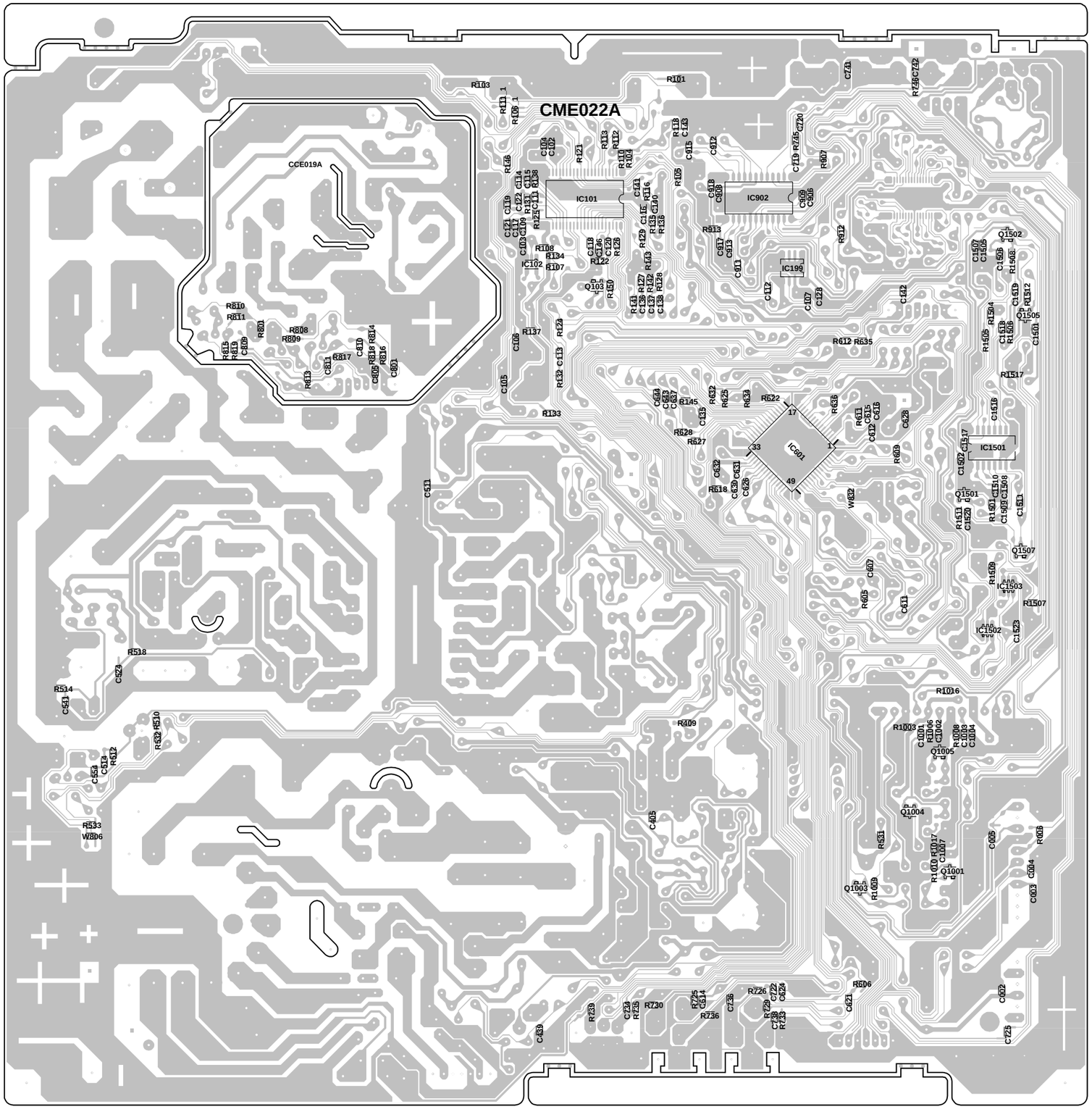
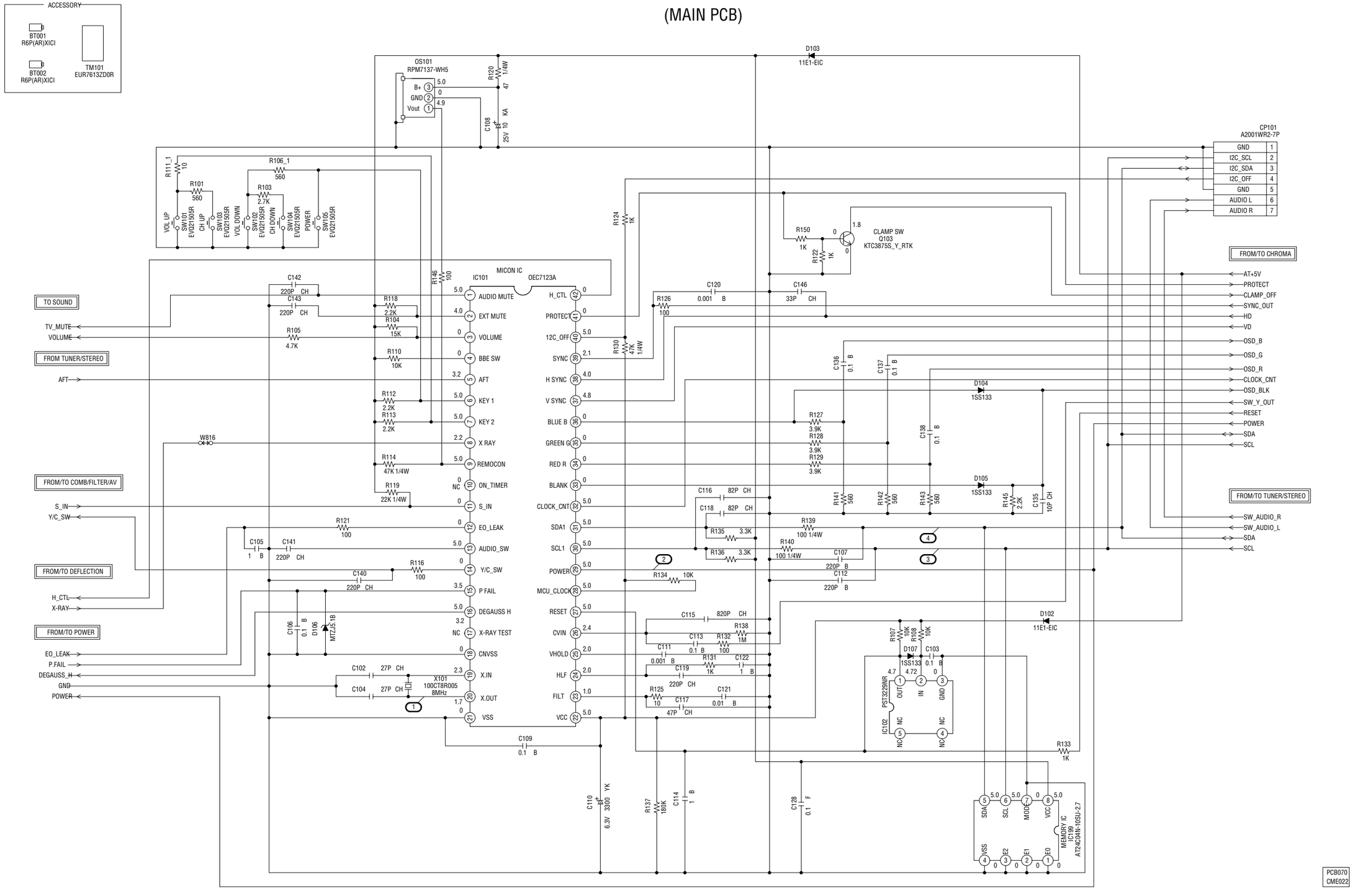
W897
W898

PRINTED CIRCUIT BOARDS
MAIN/CRT (CHIP MOUNTED PARTS)
SOLDER SIDE



MICON SCHEMATIC DIAGRAM

(MAIN PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CHROMA SCHEMATIC DIAGRAM

(MAIN PCB)

FROM/TO COMB FILTER
V_IN[YUV]
VIDEO_IN1
U_IN[YUV]
Y_IN[YUV]
VIDEO_IN3
C_V_OUT_SW
Y_V_OUT_SW
VIDEO_OUT
FSC_OUT
P.CON+5V
FROM/TO TUNER/STEREO
TUNER+5V
TUNER_VIDEO
P.CON+5V
TO SOUND
P.CON+8V[A]
FROM POWER
UNREG+12V
GND
FROM/TO DEFLECTION
P.CON+5V
GND
V_OUT
H.OUT
H_SYNC
ABCL
FROM/TO MICON
PROTECT
SW_Y_OUT
AT+5V
RESET
POWER
SCL
SDA
CLOCK_CNT
OSD_BLK
OSD_R
OSD_G
OSD_B
VD
HD
SYNC_OUT
CLAMP_OFF
TO CRT/SVM
CP802A (CP802B) B2013H02-6P
P.CON+8V 1
GND 2
G.OUT 3
R.OUT 4
B.OUT 5
CLAMP_OFF 6
CHROMA IC IC601 M61283BFP
1 HVCO F/B
2 AFC FILTER
15 G OUT
16 B OUT
47 NC(GND)
48 Y IN(YUV)
33 V/C GND
34 XTAL 3.58
P.CON 5V REG Q606 KTC3209_Y
P.CON 5V REG Q604 KTC3209_Y
P.CON 5V REG Q602 KTC3209_Y
P.CON 8V REG Q601 KTC3209_Y
AT+5V REG Q607 KTC3203_Y
PCB070
CME022

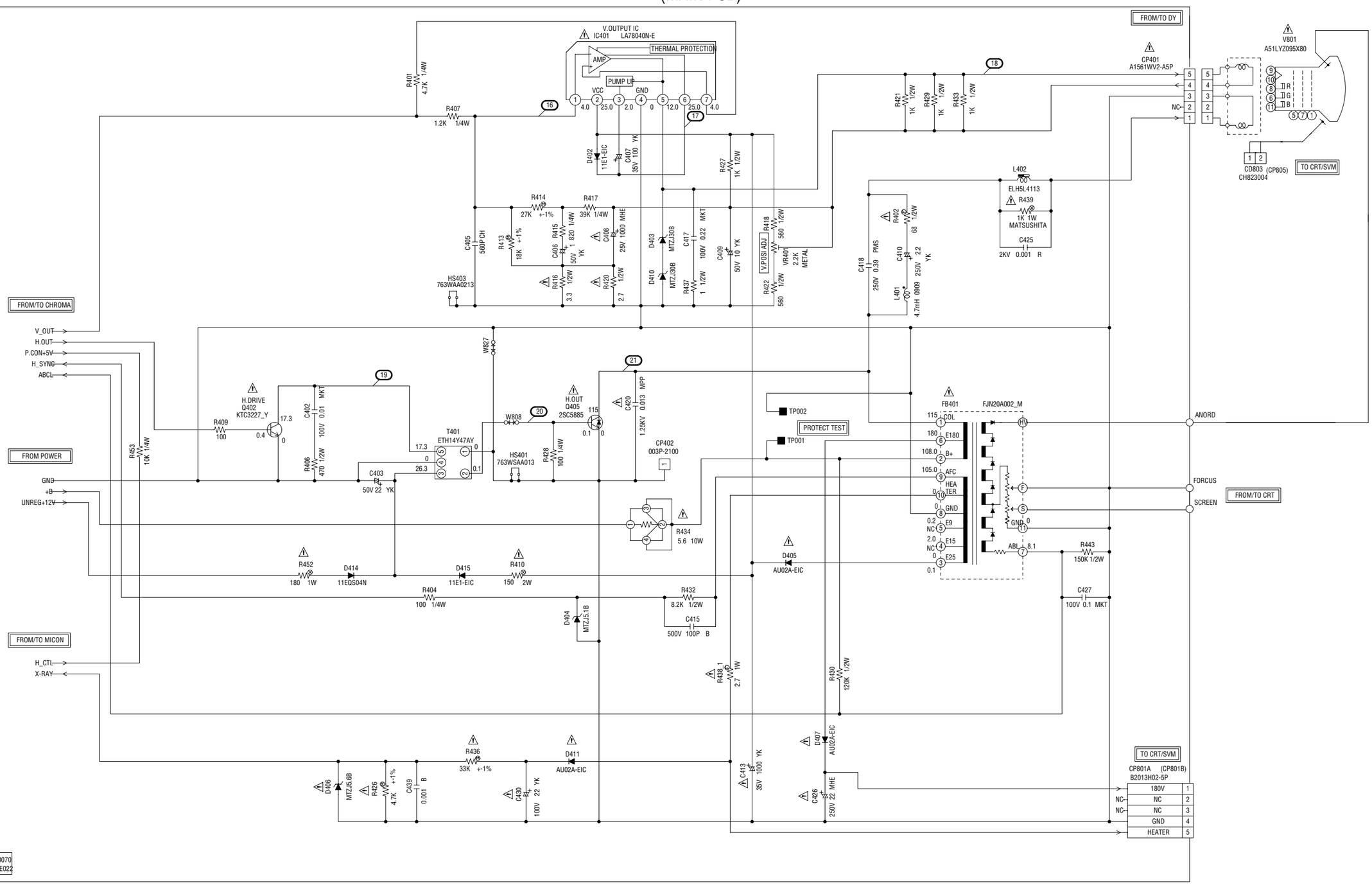
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

DEFLECTION SCHEMATIC DIAGRAM
(MAIN PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

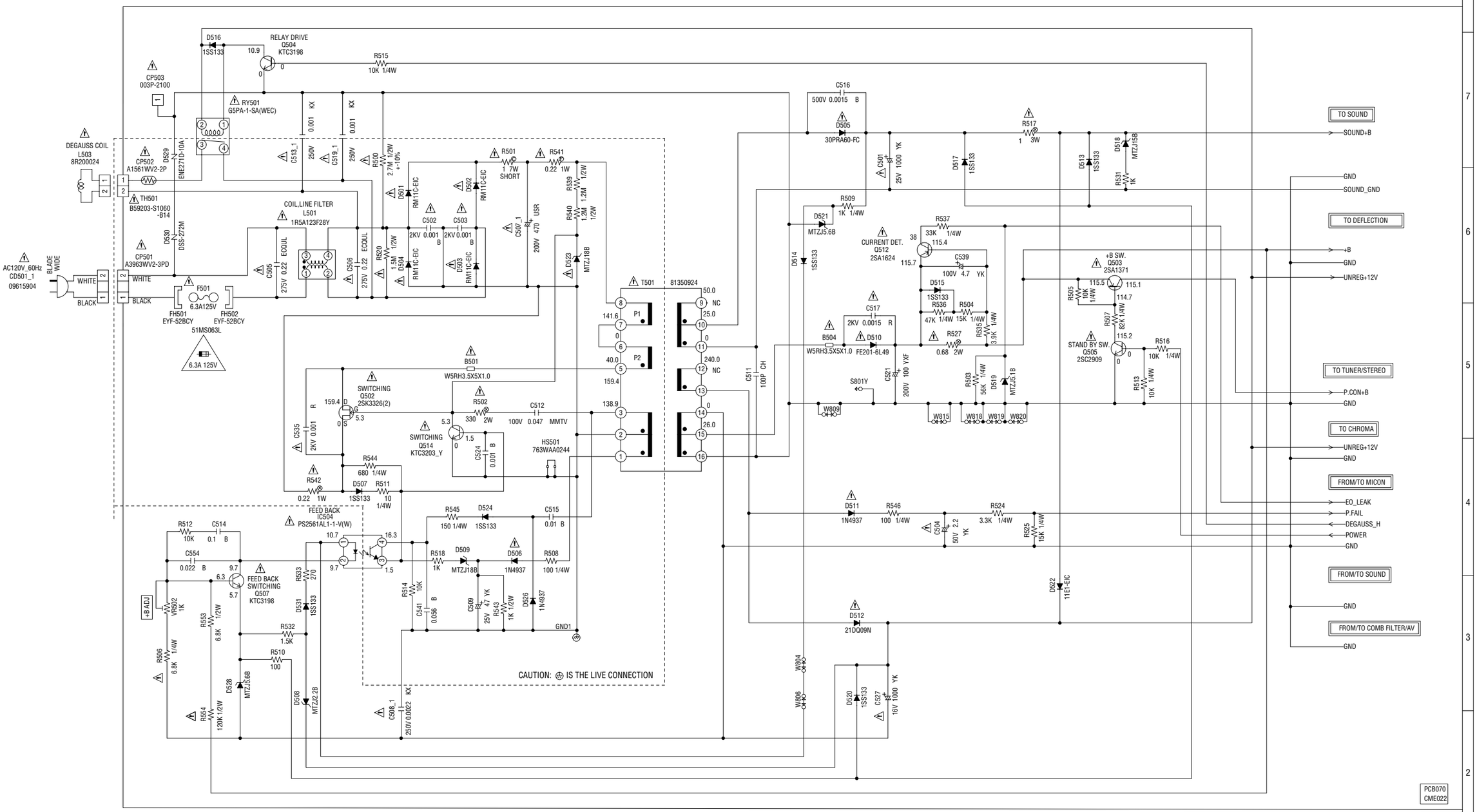
NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

POWER SCHEMATIC DIAGRAM
(MAIN PCB)



6.3A 125V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 6.3A 125V(F501)

ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 6.3A 125V(F501)

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

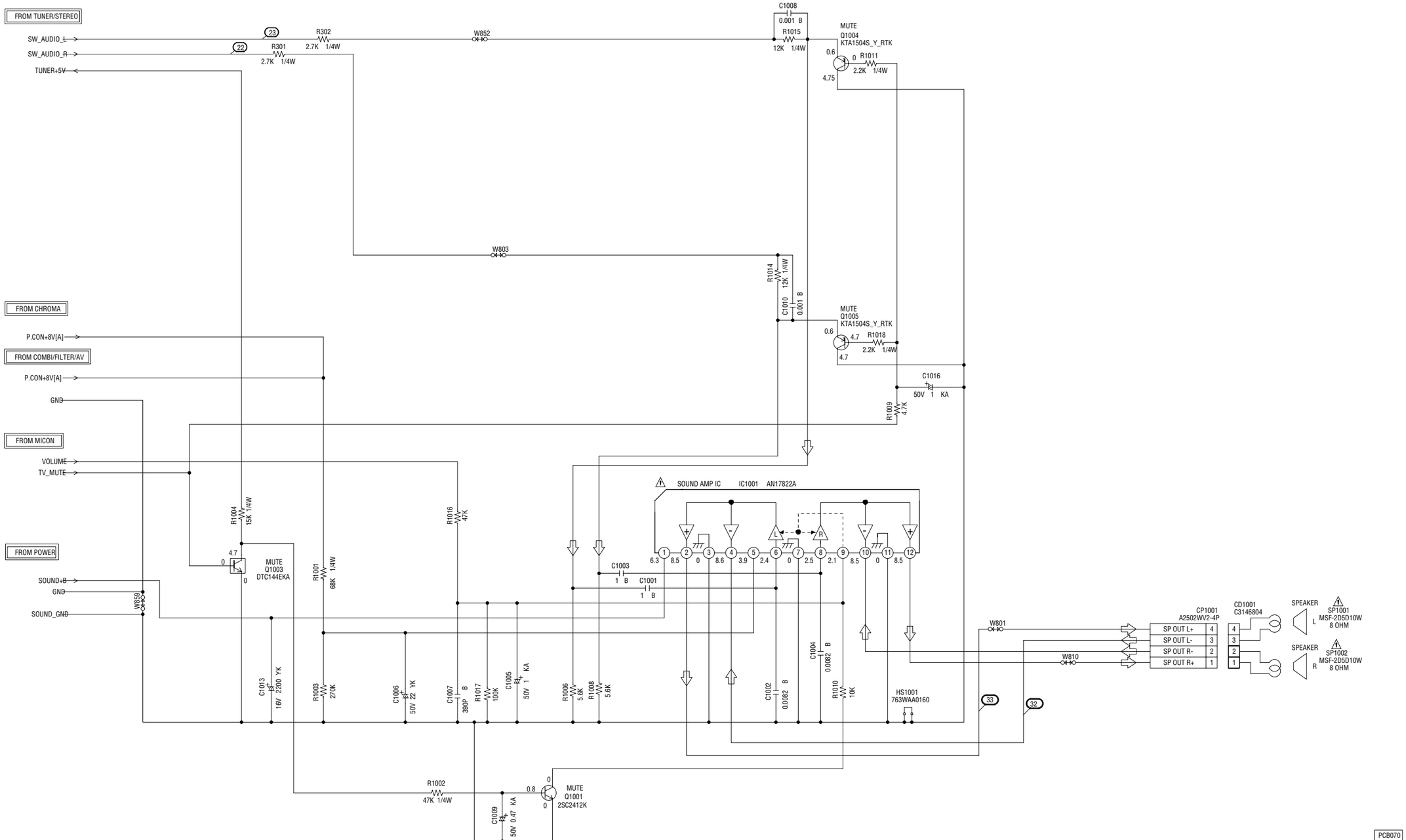
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

SOUND SCHEMATIC DIAGRAM
(MAIN PCB)



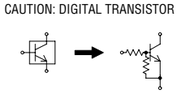
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

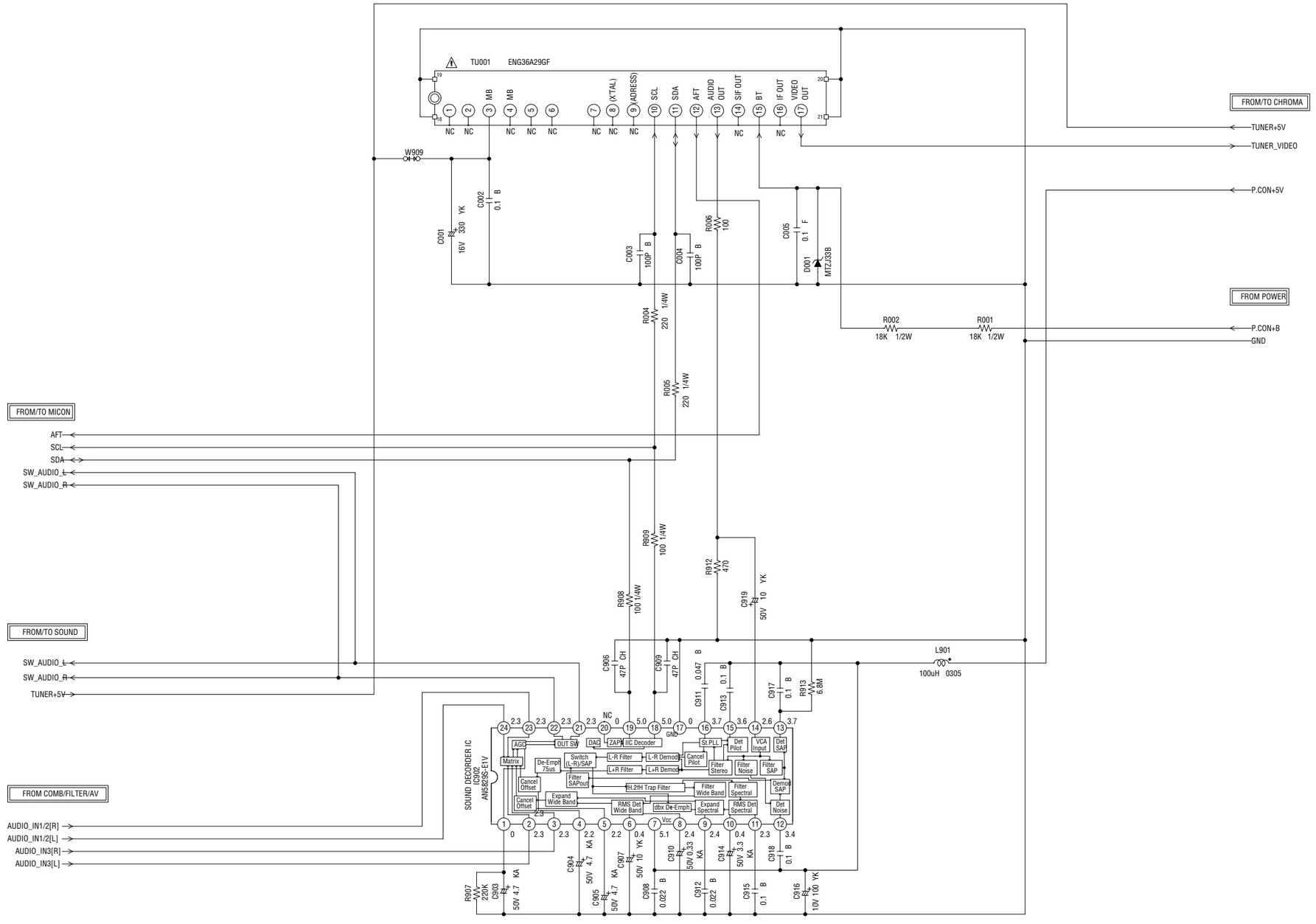
CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

CAUTION: DIGITAL TRANSISTOR



TUNER/STEREO SCHEMATIC DIAGRAM

(MAIN PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

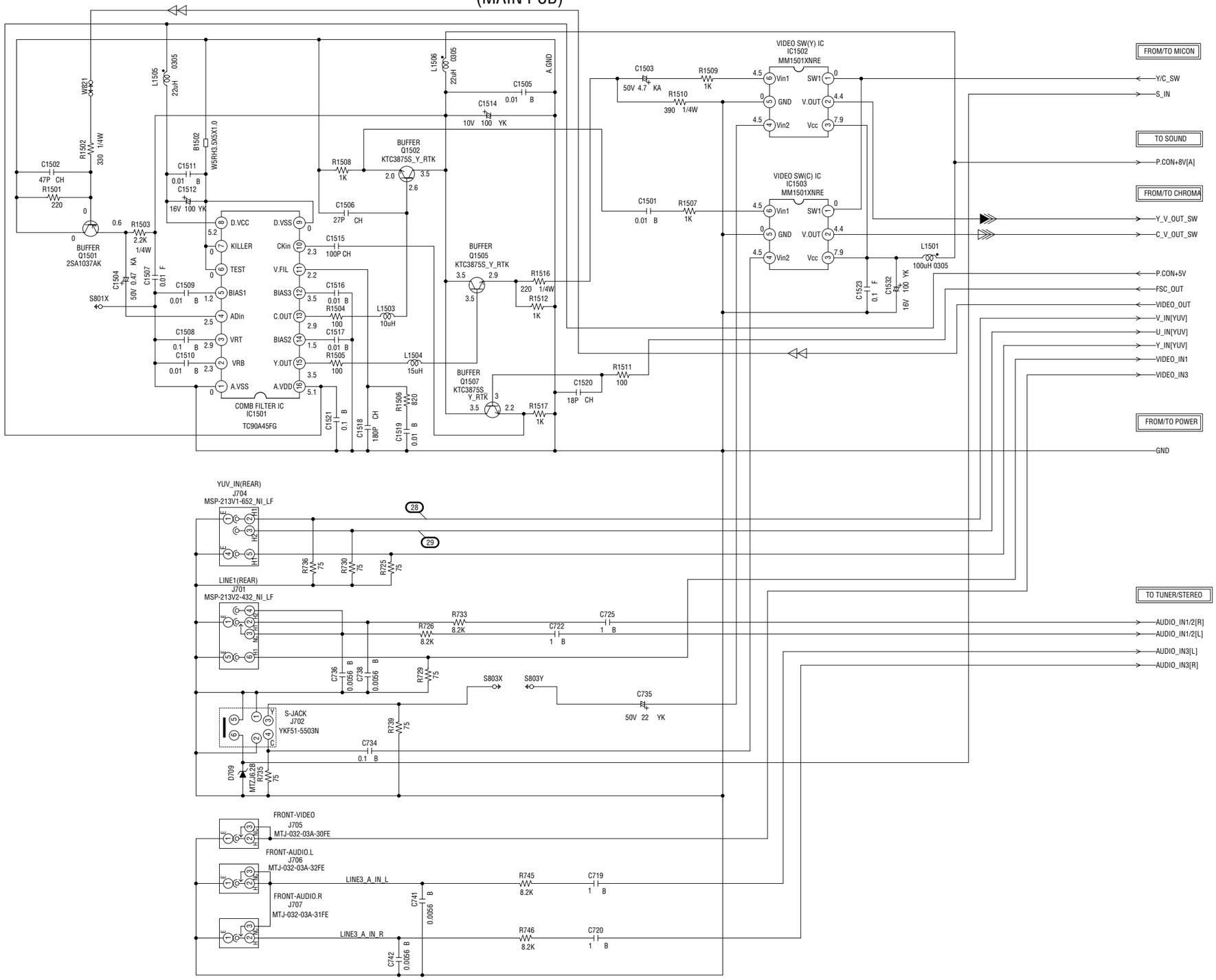
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY. USE ONES DESCRIBED IN PARTS LIST ONLY 。

COMB/FILTER/AV SCHEMATIC DIAGRAM

(MAIN PCB)



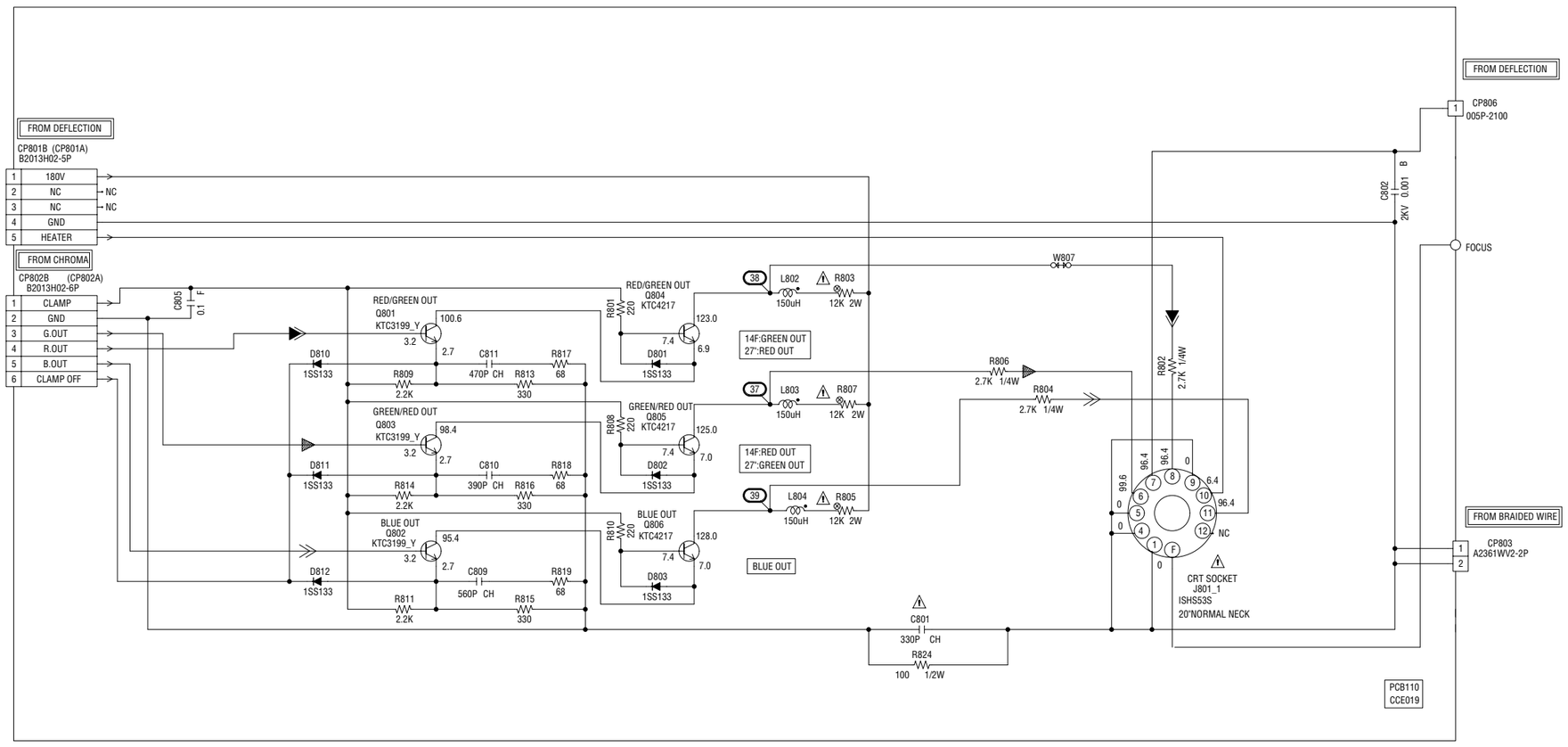
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

LUMINANCE SIGNAL
COLOR SIGNAL
TUNER VIDEO SIGNAL

CRT SCHEMATIC DIAGRAM

(CRT PCB)



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION :LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

◀ R.SIGNAL
◀ G.SIGNAL
≪ B.SIGNAL

VOLTAGE LIST

IC

IC101			
Pin	Volt.	Pin	Volt.
1	5	22	5
2	4	23	1
3	0	24	2
4	0	25	2
5	3.2	26	2.4
6	5	27	5
7	5	28	5
8	2.2	29	5
9	5	30	5
10	0	31	5
11	0	32	5
12	0	33	0
13	5	34	0
14	0	35	0
15	3.5	36	0
16	5	37	4.8
17	3.2	38	4
18	0	39	2.1
19	2.3	40	5
20	1.7	41	0
21	0	42	0

IC102	
Pin	Volt.
1	4.9
2	4.9
3	0
4	0
5	0

IC199	
Pin	Volt.
1	0
2	0
3	0
4	0
5	5
6	5
7	0
8	5

IC401	
Pin	Volt.
1	4
2	25
3	2
4	0
5	12
6	25
7	4

IC504	
Pin	Volt.
1	10.7
2	9.7
3	1.5
4	16.3

IC601			
Pin	Volt.	Pin	Volt.
1	3.2	33	0
2	4	34	3.2
3	0	35	0
4	0	36	2.8
5	0	37	5.6
6	5.5	38	1.9
7	0	39	0
8	3.8	40	1.2
9	8	41	5
10	8	42	1.9
11	0	43	0
12	8	44	1.2
13	8	45	0
14	4	46	3
15	4	47	0
16	4	48	2.7
17	2.1	49	2.2
18	4.9	50	0
19	4.9	51	3
20	4.6	52	8.7
21	2.9	53	1.9
22	2.9	54	5.7
23	2.9	55	3.2
24	4.2	56	0
25	4.9	57	0
26	3.5	58	2.8
27	3.5	59	3
28	5	60	3
29	3.5	61	8.7
30	5	62	4
31	0	63	4
32	3.6	64	4

IC902	
Pin	Volt.
1	0
2	2.3
3	2.3
4	2.2
5	2.2
6	0.4
7	5.1
8	2.4
9	2.4
10	0.4
11	2.3
12	3.4
13	3.7
14	2.6
15	3.6
16	3.7
17	0
18	5
19	5
20	0
21	2.3
22	2.3
23	2.3
24	2.3

IC1001	
Pin	Volt.
1	6.3
2	8.5
3	0
4	8.6
5	3.9
6	2.4
7	0
8	2.3
9	2.1
10	8.5
11	0
12	8.5

IC1501	
Pin	Volt.
1	0
2	2.3
3	2.9
4	2.5
5	1.2
6	0
7	0
8	5.2
9	0
10	2.3
11	2.2
12	3.5
13	2.9
14	1.5
15	3.5
16	5.1

IC1502, IC1503	
Pin	Volt.
1	0
2	4.4
3	7.9
4	4.5
5	0
6	4.5
7	7.5
8	4.5
9	4.5
10	0
11	4.5
12	7.5
13	5
14	4.5
15	0
16	4.5

VOLTAGE LIST

TRANSISTOR

Q103	
Pin	Volt.
B	0
C	1.8
E	0

Q402	
Pin	Volt.
B	0.4
C	17.3
E	0

Q405	
Pin	Volt.
B	0.1
C	115
E	0

Q502	
Pin	Volt.
G	5.8
S	0
D	159.4

Q503	
Pin	Volt.
B	114.7
C	115.1
E	115.5

Q504	
Pin	Volt.
B	0
C	10.9
E	0

Q505	
Pin	Volt.
B	0
C	115.2
E	0

Q507	
Pin	Volt.
B	6.3
C	9.7
E	5.7

Q512	
Pin	Volt.
B	115.4
C	38
E	115.7

Q514	
Pin	Volt.
B	1.5
C	5.3
E	0

Q601	
Pin	Volt.
B	8.5
C	11.3
E	7.9

Q602	
Pin	Volt.
B	5.5
C	7.2
E	5

Q604	
Pin	Volt.
B	5.5
C	7.2
E	5

Q606	
Pin	Volt.
B	5.5
C	7.2
E	5

Q607	
Pin	Volt.
B	5.5
C	8.8
E	4.9

Q801	
Pin	Volt.
B	3.2
C	100.6
E	2.7

Q802	
Pin	Volt.
B	3.2
C	95.4
E	2.7

Q803	
Pin	Volt.
B	3.2
C	98.4
E	2.7

Q804	
Pin	Volt.
B	7.4
C	123
E	6.9

Q805	
Pin	Volt.
B	7.4
C	125
E	7

Q806	
Pin	Volt.
B	7.4
C	128
E	7

Q1003	
Pin	Volt.
B	0
C	4.7
E	0

Q1004	
Pin	Volt.
B	0
C	4.75
E	0.6

Q1005	
Pin	Volt.
B	4.7
C	4.7
E	0.6

Q1501	
Pin	Volt.
B	0
C	0
E	0.6

Q1502	
Pin	Volt.
B	2.6
C	3.5
E	2

Q1505	
Pin	Volt.
B	3.5
C	3.5
E	2.9

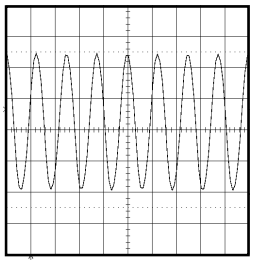
Q1507	
Pin	Volt.
B	3
C	3.5
E	2.2

B ..... BASE
C ..... COLLECTOR
E ..... EMITTER

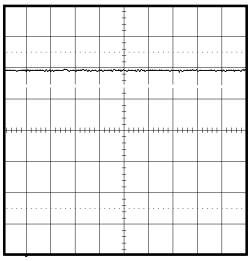
G ..... GATE
S ..... SOURCE
D ..... DRAIN

WAVEFORMS

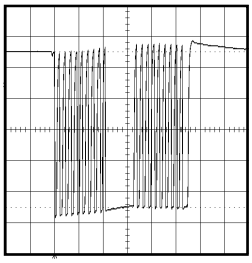
MICON



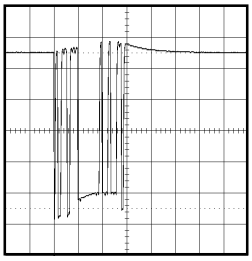
① 1V 0.1µs/div



② 1V 1µs/div

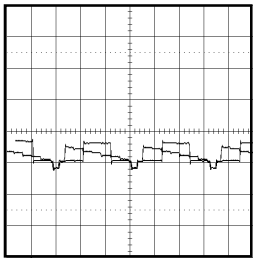


③ 1V 50µs/div

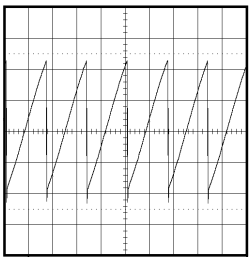


④ 1V 0.1ms/div

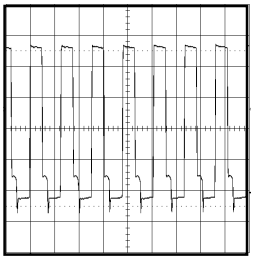
CHROMA



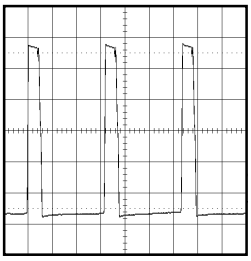
⑦ 1V 20µs/div



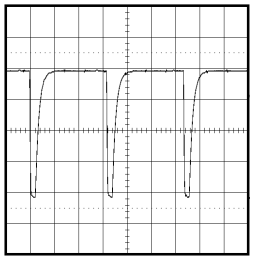
⑧ 0.5V 10ms/div



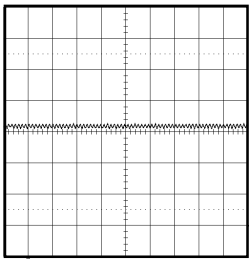
⑨ 1V 50µs/div



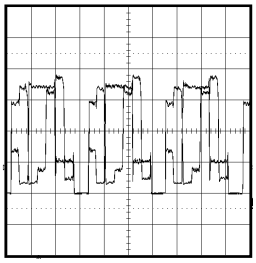
⑩ 2V 20µs/div



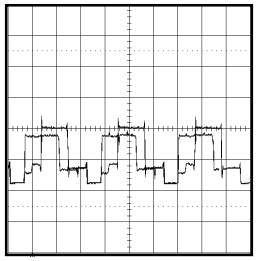
⑪ 0.5V 20µs/div



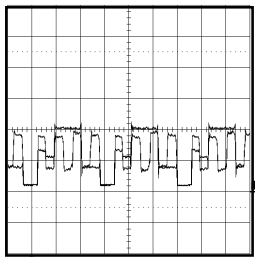
⑫ 1V 2µs/div



⑬ 1V 20µs/div

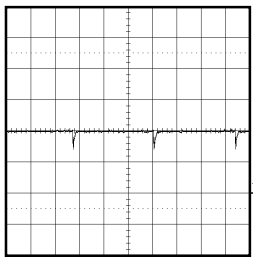


⑭ 2V 20µs/div

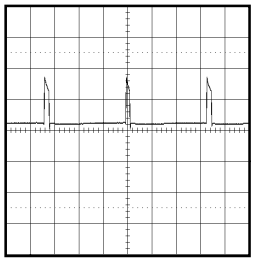


⑮ 2V 20µs/div

DEFLECTION



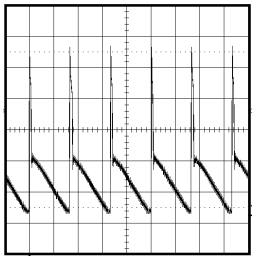
⑯ 2V 5ms/div



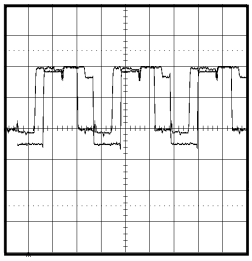
⑰ 20V 5ms/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

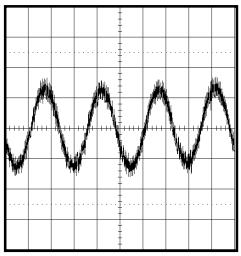
WAVEFORMS



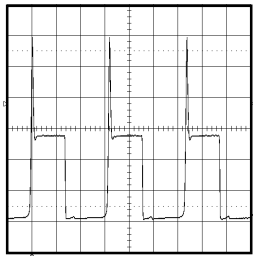
18 10V 10ms/div



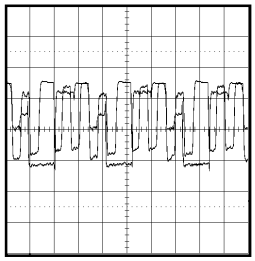
38 50V 20µs/div



33 0.5V 1ms/div

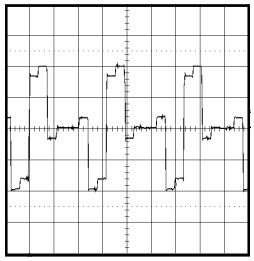


19 20V 20µs/div

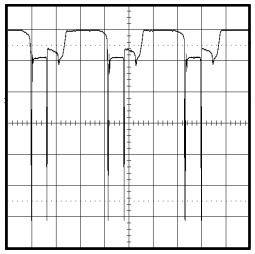


39 50V 20µs/div

COMB/FILTER/AV

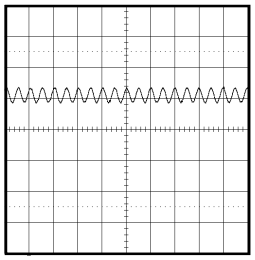


28 200mV 20µs/div

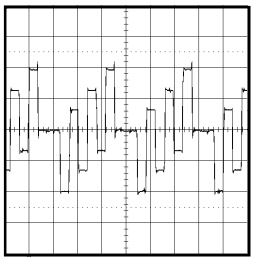


20 2V 20µs/div

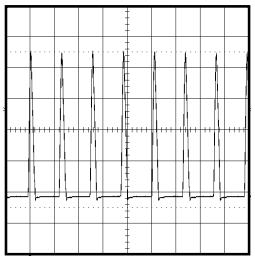
SOUND



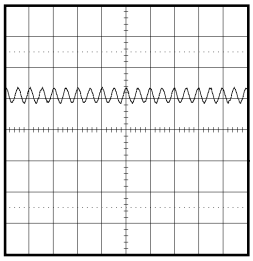
22 2V 5ms/div



29 200mV 20µs/div

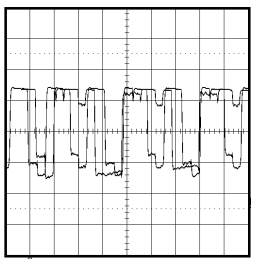


21 200V 50µs/div

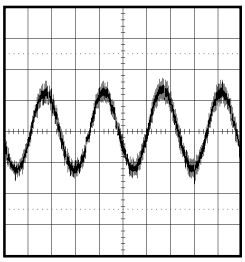


23 2V 5ms/div

CRT



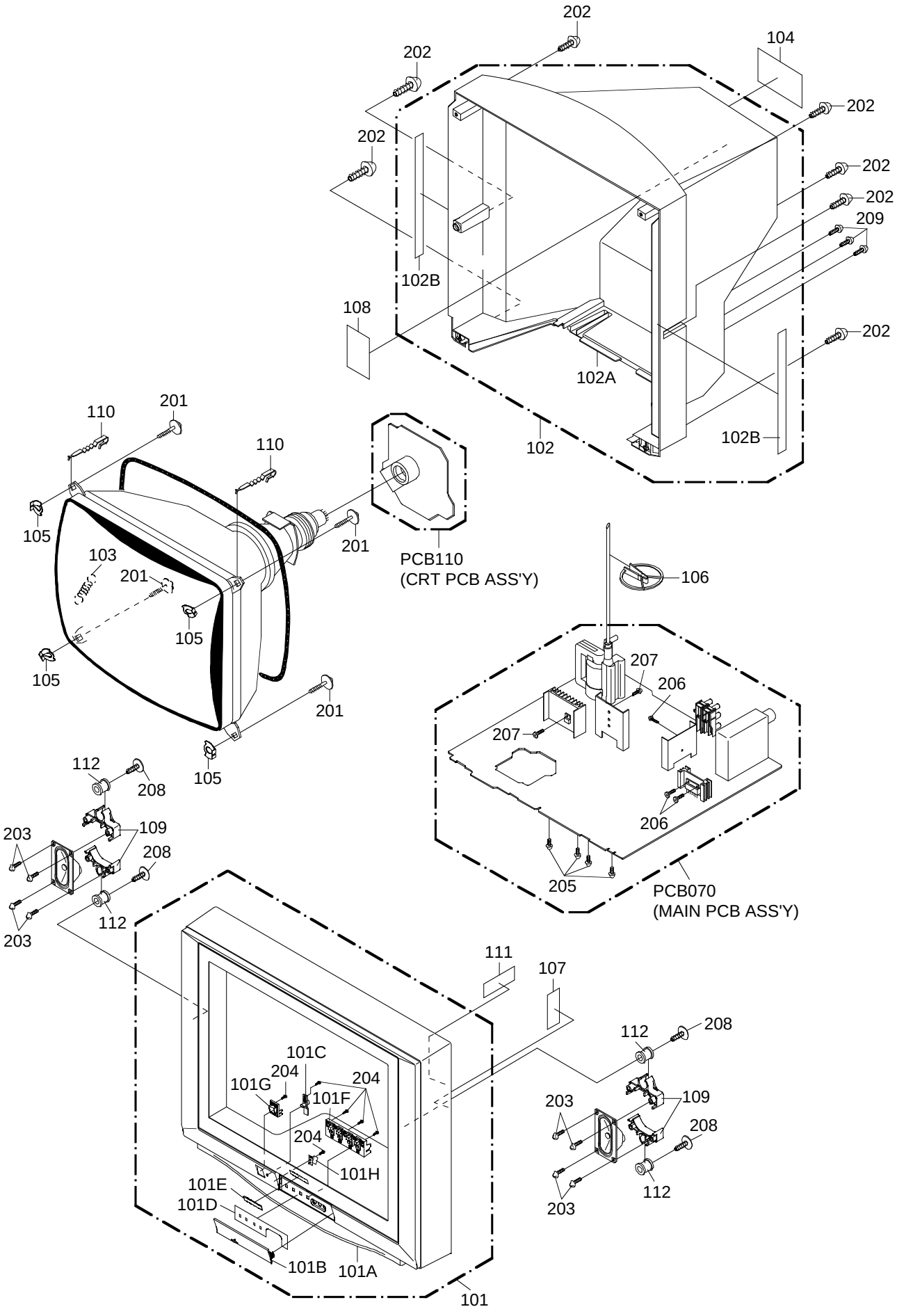
37 50V 20µs/div



32 0.5V 1ms/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW



MECHANICAL REPLACEMENT PARTS LIST

Location No.	Part No.	Description	Reference No.
101	7A701A395A	FRONT CABI ASS'Y	
101A	701WPJD004	CABINET,FRONT	
101B	712WPBA132	DOOR	
101C	713WPA0363	GUIDE,REMOCON	
101D	723000C949	SHEET,BUTTON	
101E	723576A007	BADGE,BRAND	
101F	735WPBB402	BUTTON,FRAME	
101G	735WPBB403	BUTTON,POWER	
101H	744WUA0019	SPRING,DOOR	
102	7A702A129A	BACK CABI ASS'Y	
102A	702WPAA861	CABINET,BACK	
102B	800WQ0A090	FELT SHEET	
103	741WUA0021	SPRING,EARTH	
104	722576A069	TRAVEL TAG	
105	769WSAA011	WASHER CRT T=1	
106	899HV3T000	HOLDER,ANODE WIRE	
107	722000A267	SHEET,CSA WARNING	
108	726000A110	SHEET,CRT SERVICEMAN	
109	761WPA0220	HOLDER,SPEAKER	
110	762WPA0011	HOLDER,CRT WIRE	
111	722000A266	SHEET,HWC	
112	801WR00001	DAMPER,SPEAKER	
---	J3T00231A	INSTRUCTION BOOK(E/S/F)	

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	Reference No.
		RESISTORS	
R001	R002T2183J	RC 18K OHM 1/2W	
R002	R002T2183J	RC 18K OHM 1/2W	
R004	R002T4221J	RC 220 OHM 1/4W	
R005	R002T4221J	RC 220 OHM 1/4W	
R006	R803R9101J	RC 100 OHM 1/16W	
R101	R803R9561J	RC 560 OHM 1/16W	
R103	R803R9272J	RC 2.7K OHM 1/16W	
R104	R803R9153J	RC 15K OHM 1/16W	
R105	R803R9472J	RC 4.7K OHM 1/16W	
R106	R803R9561J	RC 560 OHM 1/16W	
R107	R803R9103J	RC 10K OHM 1/16W	
R108	R803R9103J	RC 10K OHM 1/16W	
R110	R803R9103J	RC 10K OHM 1/16W	
R111	R803R9100J	RC 10 OHM 1/16W	
R112	R803R9222J	RC 2.2K OHM 1/16W	
R113	R803R9222J	RC 2.2K OHM 1/16W	
R114	R002T4473J	RC 47K OHM 1/4W	
R116	R803R9101J	RC 100 OHM 1/16W	
R118	R803R9222J	RC 2.2K OHM 1/16W	
R119	R002T4223J	RC 22K OHM 1/4W	
R120	R002T4470J	RC 47 OHM 1/4W	
R121	R803R9101J	RC 100 OHM 1/16W	
R122	R803R9102J	RC 1K OHM 1/16W	
R124	R803R9102J	RC 1K OHM 1/16W	
R125	R803R9100J	RC 10 OHM 1/16W	
R126	R803R9101J	RC 100 OHM 1/16W	
R127	R803R9392J	RC 3.9K OHM 1/16W	
R128	R803R9392J	RC 3.9K OHM 1/16W	
R129	R803R9392J	RC 3.9K OHM 1/16W	
R130	R002T4473J	RC 47K OHM 1/4W	
R131	R803R9102J	RC 1K OHM 1/16W	
R132	R803R9101J	RC 100 OHM 1/16W	
R133	R803R9102J	RC 1K OHM 1/16W	
R134	R803R9103J	RC 10K OHM 1/16W	
R135	R803R9332J	RC 3.3K OHM 1/16W	
R136	R803R9332J	RC 3.3K OHM 1/16W	
R137	R803R9184J	RC 180K OHM 1/16W	
R138	R803R9105J	RC 1M OHM 1/16W	
R139	R002T4101J	RC 100 OHM 1/4W	
R140	R002T4101J	RC 100 OHM 1/4W	
R141	R803R9561J	RC 560 OHM 1/16W	
R142	R803R9561J	RC 560 OHM 1/16W	
R143	R803R9561J	RC 560 OHM 1/16W	
R145	R803R9222J	RC 2.2K OHM 1/16W	
R146	R803R9101J	RC 100 OHM 1/16W	
R150	R803R9102J	RC 1K OHM 1/16W	
R301	R002T4272J	RC 2.7K OHM 1/4W	
R302	R002T4272J	RC 2.7K OHM 1/4W	
R401	R002T4472J	RC 4.7K OHM 1/4W	
⚠ **R402**	**R638U2680J**	**R,FUSE 68 OHM 1/2W**	
R404	R002T4101J	RC 100 OHM 1/4W	
R406	R002T2471J	RC 470 OHM 1/2W	
R407	R002T4122J	RC 1.2K OHM 1/4W	
R409	R803R9101J	RC 100 OHM 1/16W	
⚠ **R410**	**R3X18A151J**	**R,METAL OXIDE 150 OHM 2W**	
R413	R4X5T6183F	R,METAL 18K OHM 1/6W	
R414	R4X5T6273F	R,METAL 27K OHM 1/6W	
R415	R002T4821J	RC 820 OHM 1/4W	
⚠ **R416**	**R002T23R3J**	**RC 3.3 OHM 1/2W**	
R417	R002T4393J	RC 39K OHM 1/4W	
R418	R002T2561J	RC 560 OHM 1/2W	
⚠ **R420**	**R002T22R7J**	**RC 2.7 OHM 1/2W**	
R421	R002T2102J	RC 1K OHM 1/2W	
R422	R002T2561J	RC 560 OHM 1/2W	
⚠ **R426**	**R4X5T6472F**	**R,METAL 4.7K OHM 1/6W**	
R427	R002T2102J	RC 1K OHM 1/2W	
R428	R002T4101J	RC 100 OHM 1/4W	
R429	R002T2102J	RC 1K OHM 1/2W	
R430	R002T2124J	RC 120K OHM 1/2W	
R432	R002T2822J	RC 8.2K OHM 1/2W	
R433	R002T2102J	RC 1K OHM 1/2W	
⚠ **R434**	**R5X34F5R6J**	**R,CEMENT 0 5.6 OHM 10W**	
⚠ **R436**	**R4X5T6333F**	**R,METAL 33K OHM 1/6W**	
R437	R002T2010J	RC 1 OHM 1/2W	
⚠ **R438**	**R655812R7J**	**R,FUSE 2.7 OHM 1W**	
⚠ **R439**	**R3K581102J**	**R,METAL OXIDE 1K OHM 1W**	
R443	R002T2154J	RC 150K OHM 1/2W	
⚠ **R452**	**R3X181181J**	**R,METAL OXIDE 180 OHM 1W**	
R453	R002T4103J	RC 10K OHM 1/4W	
⚠ **R500**	**R0G3K2275K**	**RC 2.7M OHM 1/2W**	
⚠ **R501**	**R5X2AE010J**	**R,CEMENT 1 OHM 7W**	
⚠ **R502**	**R3X28A331J**	**R,METAL OXIDE 330 OHM 2W**	
R503	R002T4563J	RC 56K OHM 1/4W	
R504	R002T4153J	RC 15K OHM 1/4W	
R505	R002T4103J	RC 10K OHM 1/4W	
⚠ **R506**	**R002T4682J**	**RC 6.8K OHM 1/4W**	
R507	R002T4823J	RC 82K OHM 1/4W	
R508	R002T4101J	RC 100 OHM 1/4W	
R509	R002T4102J	RC 1K OHM 1/4W	
R510	R803R9101J	RC 100 OHM 1/16W	
R511	R002T4100J	RC 10 OHM 1/4W	
R512	R803R9103J	RC 10K OHM 1/16W	
R513	R002T4103J	RC 10K OHM 1/4W	
R514	R803R9103J	RC 10K OHM 1/16W	
R515	R002T4103J	RC 10K OHM 1/4W	
R516	R002T4103J	RC 10K OHM 1/4W	
⚠ **R517**	**R3X28B010J**	**R,METAL OXIDE 1 OHM 3W**	
R518	R803R9102J	RC 1K OHM 1/16W	
⚠ **R520**	**R002T2155J**	**RC 1.5M OHM 1/2W**	
R524	R002T4332J	RC 3.3K OHM 1/4W	
R525	R002T4153J	RC 15K OHM 1/4W	
⚠ **R527**	**R3X28AR68J**	**R,METAL OXIDE 0.68 OHM 2W**	
R531	R803R9102J	RC 1K OHM 1/16W	
R532	R803R9152J	RC 1.5K OHM 1/16W	
R533	R803R9271J	RC 270 OHM 1/16W	
R535	R002T4392J	RC 3.9K OHM 1/4W	
R536	R002T4473J	RC 47K OHM 1/4W	
R537	R002T4333J	RC 33K OHM 1/4W	
R539	R002T2125J	RC 1.2M OHM 1/2W	
R540	R002T2125J	RC 1.2M OHM 1/2W	
⚠ **R541**	**R63881R22J**	**R,FUSE 0.22 OHM 1W**	
⚠ **R542**	**R3X181R22J**	**R,METAL OXIDE 0.22 OHM 1W**	
R543	R00202102J	RC 1K OHM 1/2W or	
	R002T2102J	RC 1K OHM 1/2W	
R544	R002T4681J	RC 680 OHM 1/4W	
R545	R002T4151J	RC 150 OHM 1/4W	
R546	R002T4101J	RC 100 OHM 1/4W	
R553	R002T2682J	RC 6.8K OHM 1/2W	
⚠ **R554**	**R002T2124J**	**RC 120K OHM 1/2W**	
⚠ **R601**	**R3X181150J**	**R,METAL OXIDE 15 OHM 1W**	
⚠ **R602**	**R3X28B100J**	**R,METAL OXIDE 10 OHM 3W**	
R603	R002T2331J	RC 330 OHM 1/2W	
⚠ **R604**	**R3X28B100J**	**R,METAL OXIDE 10 OHM 3W**	
R605	R803R9152J	RC 1.5K OHM 1/16W	
R606	R803R9101J	RC 100 OHM 1/16W	
R609	R803R9101J	RC 100 OHM 1/16W	
R611	R803R9103J	RC 10K OHM 1/16W	
R612	R803R9103J	RC 10K OHM 1/16W	
R616	R002T2820J	RC 82 OHM 1/2W	
R618	R803R9822J	RC 8.2K OHM 1/16W	
R620	R002T4101J	RC 100 OHM 1/4W	
R622	R803R9562J	RC 5.6K OHM 1/16W	
R623	R002T4101J	RC 100 OHM 1/4W	
R625	R803R9822J	RC 8.2K OHM 1/16W	
R626	R002T4101J	RC 100 OHM 1/4W	
R627	R803R9101J	RC 100 OHM 1/16W	
R628	R803R9101J	RC 100 OHM 1/16W	
R629	R002T4682J	RC 6.8K OHM 1/4W	
R632	R803R9333J	RC 33K OHM 1/16W	
R634	R803R9102J	RC 1K OHM 1/16W	
R635	R803R9124J	RC 120K OHM 1/16W	
R636	R803R9152J	RC 1.5K OHM 1/16W	
R641	R002T4103J	RC 10K OHM 1/4W	
R657	R002T4750J	RC 75 OHM 1/4W	
R725	R803R9750J	RC 75 OHM 1/16W	
R726	R803R9822J	RC 8.2K OHM 1/16W	
R729	R803R9750J	RC 75 OHM 1/16W	
R730	R803R9750J	RC 75 OHM 1/16W	
R733	R803R9822J	RC 8.2K OHM 1/16W	
R735	R803R9750J	RC 75 OHM 1/16W	
R736	R803R9750J	RC 75 OHM 1/16W	
R739	R803R9750J	RC 75 OHM 1/16W	
R745	R803R9822J	RC 8.2K OHM 1/16W	
R746	R803R9822J	RC 8.2K OHM 1/16W	

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
		RESISTORS		
R801	R803R9221J	RC	220 OHM 1/16W	
R802	R002T4272J	RC	2.7K OHM 1/4W	
⚠ **R803**	**R3X18A123J**	**R,METAL OXIDE**	**12K OHM 2W**	
R804	R002T4272J	RC	2.7K OHM 1/4W	
⚠ **R805**	**R3X18A123J**	**R,METAL OXIDE**	**12K OHM 2W**	
R806	R002T4272J	RC	2.7K OHM 1/4W	
⚠ **R807**	**R3X18A123J**	**R,METAL OXIDE**	**12K OHM 2W**	
R808	R803R9221J	RC	220 OHM 1/16W	
R809	R803R9222J	RC	2.2K OHM 1/16W	
R810	R803R9221J	RC	220 OHM 1/16W	
R811	R803R9222J	RC	2.2K OHM 1/16W	
R813	R803R9331J	RC	330 OHM 1/16W	
R814	R803R9222J	RC	2.2K OHM 1/16W	
R815	R803R9331J	RC	330 OHM 1/16W	
R816	R803R9331J	RC	330 OHM 1/16W	
R817	R803R9680J	RC	68 OHM 1/16W	
R818	R803R9680J	RC	68 OHM 1/16W	
R819	R803R9680J	RC	68 OHM 1/16W	
R824	R002T2101J	RC	100 OHM 1/2W	
R907	R803R9224J	RC	220K OHM 1/16W	
R908	R002T4101J	RC	100 OHM 1/4W	
R909	R002T4101J	RC	100 OHM 1/4W	
R912	R803R9471J	RC	470 OHM 1/16W	
R913	R803R9685J	RC	6.8M OHM 1/16W	
R1001	R002T4683J	RC	68K OHM 1/4W	
R1002	R002T4473J	RC	47K OHM 1/4W	
R1003	R803R9274J	RC	270K OHM 1/16W	
R1004	R002T4153J	RC	15K OHM 1/4W	
R1006	R803R9562J	RC	5.6K OHM 1/16W	
R1008	R803R9562J	RC	5.6K OHM 1/16W	
R1009	R803R9472J	RC	4.7K OHM 1/16W	
R1010	R803R9103J	RC	10K OHM 1/16W	
R1011	R002T4222J	RC	2.2K OHM 1/4W	
R1014	R002T4123J	RC	12K OHM 1/4W	
R1015	R002T4123J	RC	12K OHM 1/4W	
R1016	R803R9473J	RC	47K OHM 1/16W	
R1017	R803R9104J	RC	100K OHM 1/16W	
R1018	R002T4222J	RC	2.2K OHM 1/4W	
R1501	R803R9221J	RC	220 OHM 1/16W	
R1502	R002T4331J	RC	330 OHM 1/4W	
R1503	R002T4222J	RC	2.2K OHM 1/4W	
R1504	R803R9101J	RC	100 OHM 1/16W	
R1505	R803R9101J	RC	100 OHM 1/16W	
R1506	R803R9821J	RC	820 OHM 1/16W	
R1507	R803R9102J	RC	1K OHM 1/16W	
R1508	R803R9102J	RC	1K OHM 1/16W	
R1509	R803R9102J	RC	1K OHM 1/16W	
R1510	R002T4391J	RC	390 OHM 1/4W	
R1511	R803R9101J	RC	100 OHM 1/16W	
R1512	R803R9102J	RC	1K OHM 1/16W	
R1516	R002T4221J	RC	220 OHM 1/4W	
R1517	R803R9102J	RC	1K OHM 1/16W	
		CAPACITORS		
C001	E02LT2331M	CE	330 UF 16V	
C002	CS0PB0415K	CC	0.1 UF 50V B	
C003	CS0PB0412K	CC	100 PF 50V B	
C004	CS0PB0412K	CC	100 PF 50V B	
C005	CS0PF0415Z	CC	0.1 UF 50V F	
C102	CS0PCH4K1J	CC	27 PF 50V CH	
C103	CS0PB0415K	CC	0.1 UF 50V B	
C104	CS0PCH4K1J	CC	27 PF 50V CH	
C105	CS0PB0N16K	CC	1 UF 10V B	
C106	CS0PB0415K	CC	0.1 UF 50V B	
C107	CS0PB04H2K	CC	220 PF 50V B	
C108	E50HU3100M	CE	10 UF 25 V	
C109	CS0PB0415K	CC	0.1 UF 50V B	
C110	E02LF0332M	CE	3300 UF 6.3V	
C111	CS0PB0413K	CC	0.001 UF 50V B	
C112	CS0PB04H2K	CC	220 PF 50V B	
C113	CS0PB0415K	CC	0.1 UF 50V B	
C114	CS0PB0N16K	CC	1 UF 10V B	
C115	CS0PCH4W2J	CC	820 PF 50V CH	
C116	CS0PCH4W1J	CC	82 PF 50V CH	
C117	CS0PCH4Q1J	CC	47 PF 50V CH	
C118	CS0PCH4W1J	CC	82 PF 50V CH	
C119	CS0PCH4H2J	CC	220 PF 50V CH	
C120	CS0PB0413K	CC	0.001 UF 50V B	

REF. NO.	PART NO.	DESCRIPTION		
		CAPACITORS		
C121	CS0PB0414K	CC	0.01 UF 50V B	
C122	CS0PB0N16K	CC	1 UF 10V B	
C128	CS0PF0415Z	CC	0.1 UF 50V F	
C135	CS0PCH411D	CC	10 PF 50V CH	
C136	CS0PB0415K	CC	0.1 UF 50V B	
C137	CS0PB0415K	CC	0.1 UF 50V B	
C138	CS0PB0415K	CC	0.1 UF 50V B	
C140	CS0PCH4H2J	CC	220 PF 50V CH	
C141	CS0PCH4H2J	CC	220 PF 50V CH	
C142	CS0PCH4H2J	CC	220 PF 50V CH	
C143	CS0PCH4H2J	CC	220 PF 50V CH	
C146	CS0PCH4L1J	CC	33 PF 50V CH	
C402	P235W1103J	CMP	0.01 UF 100V MKT	
C403	E02LU5220M	CE	22 UF 50V	
C405	CS0PCH4S2J	CC	560 PF 50V CH	
C406	E02LU5010M	CE	1 UF 50V	
C407	E02LU4101M	CE	100 UF 35V	
⚠ **C408**	**E5EZF3102M**	**CE**	**1000 UF 25V**	
C409	E02LU5100M	CE	10 UF 50V	
C410	E02LTD2R2M	CE	2.2 UF 250V	
⚠ **C413**	**E02LF4102M**	**CE**	**1000 UF 35V**	
C415	C0JTB0512K	CC	100 PF 500V B	
C417	P235W1224J	CMP	0.22 UF 100V MKT	
C418	P4J7F3394J	CMPP	0.39 UF 250V PMS	
⚠ **C420**	**P4N8FJ133H**	**CMPP**	**0.013 UF 1.25KV**	
C425	C03L0R713K	CC	0.001 UF 2KV R	
⚠ **C426**	**E5EZFD220M**	**CE**	**22 UF 250V**	
C427	P235W1104J	CMP	0.1 UF 100V MKT	
⚠ **C430**	**E02LU8220M**	**CE**	**22 UF 100V**	
C439	CS0PB0413K	CC	0.001 UF 50V B	
⚠ **C501**	**E02LF3102M**	**CE**	**1000 UF 25V**	
⚠ **C502**	**C0JBB0713K**	**CC**	**0.001 UF 2KV B**	
⚠ **C503**	**C0JBB0713K**	**CC**	**0.001 UF 2KV B**	
⚠ **C504**	**E02LU52R2M**	**CE**	**2.2 UF 50V**	
⚠ **C505**	**P2122B224M**	**CMP**	**0.22 UF 275V ECQUL**	
⚠ **C506**	**P2122B224M**	**CMP**	**0.22 UF 275V ECQUL**	
⚠ **C507**	**E52DGC471M**	**CE**	**5 470 UF 200V**	
⚠ **C508**	**CD39E0MH3M**	**CC**	**0.0022UF 250V**	
C509	E02LU3470M	CE	47 UF 25V	
C511	CS0PCH412J	CC	100 PF 50V CH	
C512	P232T1473J	CMP	0.047 UF 100V MMTV	
⚠ **C513**	**CD39E0M13M**	**CC**	**0.001 UF 250V**	
C514	CS0PB0415K	CC	0.1 UF 50V B	
C515	CQGTB0414K	CC	0.01 UF 50V B	
C516	C0JTB05E3K	CC	0.0015UF 500V B	
⚠ **C517**	**C03L0R7E3K**	**CC**	**0.0015UF 2KV R**	
⚠ **C519**	**CD39E0M13M**	**CC**	**0.001 UF 250V**	
C521	E62NFC101M	CE	100 UF 200V	
C524	CS0PB0413K	CC	0.001 UF 50V B	
⚠ **C527**	**E02LT2102M**	**CE**	**1000 UF 16V**	
⚠ **C535**	**C03L0R713K**	**CC**	**0.001 UF 2KV R**	
C539	E02LT84R7M	CE	4.7 UF 100V	
C541	CS0PB03S4K	CC	0.056 UF 25V B	
C554	CS0PB04H4K	CC	0.022 UF 50V B	
C602	E50HU1330M	CE	33 UF 10 V	
C603	E02LU2470M	CE	47 UF 16V	
C605	E02LU2470M	CE	47 UF 16V	
C606	P6M9T0334J	CMPL	0.33 UF 50V TF	
C607	CS0PB0414K	CC	0.01 UF 50V B	
C609	P6M9T0104J	CMPL	0.1 UF 50V TF	
C610	E02LU2470M	CE	47 UF 16V	
C611	CS0PB0N16K	CC	1 UF 10V B	
C612	CS0PB0414K	CC	0.01 UF 50V B	
C614	CS0PB0415K	CC	0.1 UF 50V B	
C615	CS0PB0N16K	CC	1 UF 10V B	
C616	CS0PB0414K	CC	0.01 UF 50V B	
C618	CQGTF0416Z	CC	1 UF 50V F	
C619	CQGTB0415K	CC	0.1 UF 50V B	
C621	CS0PB0N16K	CC	1 UF 10V B	
C622	E02LU2470M	CE	47 UF 16V	
C624	CS0PB0415K	CC	0.1 UF 50V B	
C626	CS0PCH412J	CC	100 PF 50V CH	
C628	CS0PB0414K	CC	0.01 UF 50V B	
C629	E02LT2102M	CE	1000 UF 16V	
C630	CS0PB02Q5K	CC	0.47 UF 16V B	
C631	CS0PB04E4K	CC	0.015 UF 50V B	
C632	CS0PCH4G1J	CC	18 PF 50V CH	

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		CAPACITORS	
C637	CS0PCH4L1J	CC 33 PF 50V CH	
C638	E00NU2100M	CE 10 UF 16 V	
C641	CQGTB0415K	CC 0.1 UF 50V B	
C642	E50HU5010M	CE 1 UF 50V	
C643	CS0PCH4L1J	CC 33 PF 50V CH	
C644	CS0PCH4L1J	CC 33 PF 50V CH	
C719	CS0PB0N16K	CC 1 UF 10V B	
C720	CS0PB0N16K	CC 1 UF 10V B	
C722	CS0PB0N16K	CC 1 UF 10V B	
C725	CS0PB0N16K	CC 1 UF 10V B	
C734	CS0PB0415K	CC 0.1 UF 50V B	
C735	E02L05220M	CE 22 UF 50V	or
	E02LU5220M	CE 22 UF 50V	
C736	CS0PB04S3K	CC 0.0056UF 50V B	
C738	CS0PB04S3K	CC 0.0056UF 50V B	
C741	CS0PB04S3K	CC 0.0056UF 50V B	
C742	CS0PB04S3K	CC 0.0056UF 50V B	
⚠ **C801**	**CS0PCH4L2J**	**CC 330 PF 50V CH**	
C802	C0JBB0713K	CC 0.001 UF 2KV B	
C805	CS0PF0415Z	CC 0.1 UF 50V F	
C809	CS0PCH4S2J	CC 560 PF 50V CH	
C810	CS0PCH4N2J	CC 390 PF 50V CH	
C811	CS0PCH4Q2J	CC 470 PF 50V CH	
C903	E50HU54R7M	CE 4.7 UF 50V	
C904	E50HU54R7M	CE 4.7 UF 50V	
C905	E50HU54R7M	CE 4.7 UF 50V	
C906	CS0PCH4Q1J	CC 47 PF 50V CH	
C907	E02LU5100M	CE 10 UF 50V	
C908	CS0PB04H4K	CC 0.022 UF 50V B	
C909	CS0PCH4Q1J	CC 47 PF 50V CH	
C910	E50HU5R33M	CE 0.33 UF 50 V	
C911	CS0PB04Q4K	CC 0.047 UF 50V B	
C912	CS0PB04H4K	CC 0.022 UF 50V B	
C913	CS0PB0415K	CC 0.1 UF 50V B	
C914	E50HU53R3M	CE 3.3 UF 50V	
C915	CS0PB0415K	CC 0.1 UF 50V B	
C916	E02LU1101M	CE 100 UF 10V	
C917	CS0PB0415K	CC 0.1 UF 50V B	
C918	CS0PB0415K	CC 0.1 UF 50V B	
C919	E02LU5100M	CE 10 UF 50V	
C1001	CS0PB0N16K	CC 1 UF 10V B	
C1002	CS0PB04W3K	CC 0.0082UF 50V B	
C1003	CS0PB0N16K	CC 1 UF 10V B	
C1004	CS0PB04W3K	CC 0.0082UF 50V B	
C1005	E50HU5010M	CE 1 UF 50V	
C1006	E02LU5220M	CE 22 UF 50V	
C1007	CS0PB04N2K	CC 390 PF 50V B	
C1008	CHGTB0413K	CC 0.001 UF 50V B	
C1009	E50HU5R47M	CE 0.47 UF 50V	
C1010	CHGTB0413K	CC 0.001 UF 50V B	
C1013	E02L02222M	CE 2200 UF 16V	or
	E02LT2222M	CE 2200 UF 16V	
C1016	E50HU5010M	CE 1 UF 50V	
C1501	CS0PB0414K	CC 0.01 UF 50V B	
C1502	CS0PCH4Q1J	CC 47 PF 50V CH	
C1503	E50HU54R7M	CE 4.7 UF 50V	
C1504	E50HU5R47M	CE 0.47 UF 50V	
C1505	CS0PB0414K	CC 0.01 UF 50V B	
C1506	CS0PCH4K1J	CC 27 PF 50V CH	
C1507	CS0PF0414Z	CC 0.01 UF 50V F	
C1508	CS0PB0415K	CC 0.1 UF 50V B	
C1509	CS0PB0414K	CC 0.01 UF 50V B	
C1510	CS0PB0414K	CC 0.01 UF 50V B	
C1511	CS0PB0414K	CC 0.01 UF 50V B	
C1512	E02LU2101M	CE 100 UF 16V	
C1514	E02LU1101M	CE 100 UF 10V	
C1515	CQGTCH412J	CC 100 PF 50V CH	
C1516	CS0PB0414K	CC 0.01 UF 50V B	
C1517	CS0PB0414K	CC 0.01 UF 50V B	
C1518	CS0PCH4G2J	CC 180 PF 50V CH	
C1519	CS0PB0414K	CC 0.01 UF 50V B	
C1520	CS0PCH4G1J	CC 18 PF 50V CH	
C1521	CQG0B0415K	CC 0.1 UF 50V B	or
	CQGTB0415K	CC 0.1 UF 50V B	
C1523	CS0PF0415Z	CC 0.1 UF 50V F	
C1532	E02LU2101M	CE 100 UF 16V	

REF. NO.	PART NO.	DESCRIPTION	
		DIODES	
D001	D97U03301B	DIODE,ZENER	MTZJ33B T-77
D102	D2WT011E10	DIODE,SILICON	11E1-EIC
D103	D2WT011E10	DIODE,SILICON	11E1-EIC
D104	D1VT001330	DIODE,SILICON	1SS133T-77
D105	D1VT001330	DIODE,SILICON	1SS133T-77
D106	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77
D107	D1VT001330	DIODE,SILICON	1SS133T-77
D402	D2WT011E10	DIODE,SILICON	11E1-EIC
D403	D97U03001B	DIODE,ZENER	MTZJ30B T-77
D404	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77
⚠ **D405**	**D2WTAU02A0**	**DIODE,SILICON**	**AU02A-EIC**
⚠ **D406**	**D97U05R61B**	**DIODE,ZENER**	**MTZJ5.6B T-77**
⚠ **D407**	**D2WTAU02A0**	**DIODE,SILICON**	**AU02A-EIC**
D410	D97U03001B	DIODE,ZENER	MTZJ30B T-77
⚠ **D411**	**D2WTAU02A0**	**DIODE,SILICON**	**AU02A-EIC**
D414	D28TQS04N0	DIODE,SCHOTTKY	11EQS04N-TA1B2
D415	D2WT011E10	DIODE,SILICON	11E1-EIC
⚠ **D501**	**D2WTRM11C0**	**DIODE,SILICON**	**RM11C-EIC**
⚠ **D502**	**D2WTRM11C0**	**DIODE,SILICON**	**RM11C-EIC**
⚠ **D503**	**D2WTRM11C0**	**DIODE,SILICON**	**RM11C-EIC**
⚠ **D504**	**D2WTRM11C0**	**DIODE,SILICON**	**RM11C-EIC**
⚠ **D505**	**D28F0PRA60**	**DIODE,RECTIFIER**	**30PRA60-FC**
⚠ **D506**	**D2WXN49370**	**DIODE,SILICON**	**1N4937**
D507	D1VT001330	DIODE,SILICON	1SS133T-77
D508	D97U02R21B	DIODE,ZENER	MTZJ2.2B T-77
D509	D97U01801B	DIODE,ZENER	MTZJ18B T-77
⚠ **D510**	**D2CF2016L0**	**DIODE,SILICON**	**FE201-6L49**
⚠ **D511**	**D2WXN49370**	**DIODE,SILICON**	**1N4937**
⚠ **D512**	**D28T21DQN9**	**DIODE,SCHOTTKY**	**21DQ09N-TA2B1**
D513	D1VT001330	DIODE,SILICON	1SS133T-77
D514	D1VT001330	DIODE,SILICON	1SS133T-77
D515	D1VT001330	DIODE,SILICON	1SS133T-77
D516	D1VT001330	DIODE,SILICON	1SS133T-77
D517	D1VT001330	DIODE,SILICON	1SS133T-77
D518	D97U01501B	DIODE,ZENER	MTZJ15B T-77
D519	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77
D520	D1VT001330	DIODE,SILICON	1SS133T-77
D521	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D522	D2WT011E10	DIODE,SILICON	11E1-EIC
⚠ **D523**	**D97U01801B**	**DIODE,ZENER**	**MTZJ18B T-77**
D524	D1VT001330	DIODE,SILICON	1SS133T-77
D526	D2WXN49370	DIODE,SILICON	1N4937
D528	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D529	D6E027110A	DIODE,VARISTA	ENE271D-10A
D530	DOU002720M	DIODE,VARISTA	DSS-272M-S00B
D531	D1VT001330	DIODE,SILICON	1SS133T-77
D601	D1VT001330	DIODE,SILICON	1SS133T-77
D602	D97U08R21B	DIODE,ZENER	MTZJ8.2B T-77
D604	D97U01201B	DIODE,ZENER	MTZJ12B T-77
D605	D1VT001330	DIODE,SILICON	1SS133T-77
D606	D1VT001330	DIODE,SILICON	1SS133T-77
D607	D1VT001330	DIODE,SILICON	1SS133T-77
D608	D2WT011E10	DIODE,SILICON	11E1-EIC
D613	D97U06R21B	DIODE,ZENER	MTZJ6.2B T-77
D614	D1VT001330	DIODE,SILICON	1SS133T-77
D615	D1VT001330	DIODE,SILICON	1SS133T-77
D616	D1VT001330	DIODE,SILICON	1SS133T-77
D617	D1VT001330	DIODE,SILICON	1SS133T-77
D618	D1VT001330	DIODE,SILICON	1SS133T-77
D619	D1VT001330	DIODE,SILICON	1SS133T-77
D620	D1VT001330	DIODE,SILICON	1SS133T-77
D621	D1VT001330	DIODE,SILICON	1SS133T-77
D622	D1VT001330	DIODE,SILICON	1SS133T-77
D623	D1VT001330	DIODE,SILICON	1SS133T-77
D709	D97U06R21B	DIODE,ZENER	MTZJ6.2B T-77
D801	D1VT001330	DIODE,SILICON	1SS133T-77
D802	D1VT001330	DIODE,SILICON	1SS133T-77
D803	D1VT001330	DIODE,SILICON	1SS133T-77
D810	D1VT001330	DIODE,SILICON	1SS133T-77
D811	D1VT001330	DIODE,SILICON	1SS133T-77
D812	D1VT001330	DIODE,SILICON	1SS133T-77
		ICS	
IC101	I56F07123A	IC	OEC7123A
IC102	I9UF032290	IC	PST3229NR
IC199	A3S003U075	INIT DATA	AT24C04N-10SU-2.7
⚠ **IC401**	**I03TD804N0**	**IC**	**LA78040N-E**
⚠ **IC504**	**000220002W**	**PHOTO COUPLER**	**PS2561AL1-1-V(W)**

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		ICS	
IC601	I06FC1283B	IC	M61283BFP
IC902	I01FF58290	IC	AN5829S-E1V
⚠ **IC1001**	**I0FSP7822A**	**IC**	**AN17822A**
IC1501	I05FEA45FG	IC	TC90A45FG
IC1502	I0UF015010	IC	MM1501XNRE
IC1503	I0UF015010	IC	MM1501XNRE
		TRANSISTORS	
Q103	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
⚠ **Q402**	**TCAT03227Y**	**TRANSISTOR,SILICON**	**KTC3227_Y-AT**
⚠ **Q405**	**TC1G058850**	**TRANSISTOR,SILICON**	**2SC5885**
⚠ **Q502**	**T220033260**	**FET**	**2SK3326(2)**
⚠ **Q503**	**TA3T1371A0**	**TRANSISTOR,SILICON**	**2SA1371(D,E)-AE**
Q504	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
⚠ **Q505**	**TC3T029090**	**TRANSISTOR,SILICON**	**2SC2909(S,T)-AA**
⚠ **Q507**	**TCATC31980**	**TRANSISTOR,SILICON**	**KTC3198-AT(Y,GR)**
⚠ **Q512**	**TA3T016240**	**TRANSISTOR,SILICON**	**2SA1624-AA**
⚠ **Q514**	**TCAT032034**	**TRANSISTOR,SILICON**	**KTC3203_Y-AT**
Q601	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q602	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q604	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q606	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q607	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
⚠ **Q801**	**TCATC3199Y**	**TRANSISTOR,SILICON**	**KTC3199_Y-AT**
⚠ **Q802**	**TCATC3199Y**	**TRANSISTOR,SILICON**	**KTC3199_Y-AT**
⚠ **Q803**	**TCATC3199Y**	**TRANSISTOR,SILICON**	**KTC3199_Y-AT**
⚠ **Q804**	**TCA0042170**	**TRANSISTOR,SILICON**	**KTC4217(O,Y)**
⚠ **Q805**	**TCA0042170**	**TRANSISTOR,SILICON**	**KTC4217(O,Y)**
⚠ **Q806**	**TCA0042170**	**TRANSISTOR,SILICON**	**KTC4217(O,Y)**
Q1001	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q1003	TNYJD05001	COMPOUND TRANSISTOR	DTC144EKAT146
Q1004	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q1005	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q1501	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q1502	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q1505	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q1507	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
		COILS &TRANSFORMERS	
L401	021679472K	COIL	4.7 MH
L402	022100027A	COIL,LINEARITY	ELH5L4113
⚠ **L501**	**029T000097**	**COIL,LINE FILTER**	**1R5A123F28Y**
⚠ **L503**	**028R200024**	**COIL,DEGAUSS**	**8R200024**
L802	021673151K	COIL	150 UH
L803	021673151K	COIL	150 UH
L804	021673151K	COIL	150 UH
L901	02167F101J	COIL	100 UH
L1501	02167F101J	COIL	100 UH
L1503	021LA6100J	COIL	10 UH
L1504	021LA6150J	COIL	15 UH
L1505	02167F220J	COIL	22 UH
L1506	02167F220J	COIL	22 UH
T401	045013003J	TRANS,HORIZONTAL DRIVE	ETH14Y47AY
⚠ **T501**	**0481350924**	**TRANSFORMER,SWITCHING**	**81350924**
		JACKS	
J701	060J431020	RCA JACK	MSP-213V2-432_NI_LF
J702	063Q700011	JACK	YKF51-5503N
J704	060J411032	RCA JACK	MSP-213V1-652_NI_LF
J705	060J401104	RCA JACK	MTJ-032-03A-30FE
J706	060J401106	RCA JACK	MTJ-032-03A-32FE
J707	060J401105	RCA JACK	MTJ-032-03A-31FE
⚠ **J801**	**066F130020**	**SOCKET,CATHODE RAY,TUBE**	**ISHS53S**
		SWITCHES	
SW101	0504101T34	SWITCH,TACT	EVQ21505R
SW102	0504101T34	SWITCH,TACT	EVQ21505R
SW103	0504101T34	SWITCH,TACT	EVQ21505R
SW104	0504101T34	SWITCH,TACT	EVQ21505R
SW105	0504101T34	SWITCH,TACT	EVQ21505R
		VARIABLE RESISTORS	
VR401	V1K63H3BTE	VOLUME,SEMI FIXED	NVG6TLTAB222
VR502	V116313BTC	VOLUME,SEMI FIXED	EVNCYAA03B13
		P.C.BOARD ASSEMBLIES	
PCB070	A3S003U070	PCB ASS'Y	CME022A
PCB110	A3S003U110	PCB ASS'Y	CCE019A
		MISCELLANEOUS	
⚠ **B501**	**024HT03553**	**CORE,BEADS**	**W5RH3.5X5X1.0**
⚠ **B504**	**024HT03553**	**CORE,BEADS**	**W5RH3.5X5X1.0**
B1502	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
BT001	141L003010	BATTERY,MANGAN	R6P(AR)XICI

REF. NO.	PART NO.	DESCRIPTION	
		MISCELLANEOUS	
BT002	141L003010	BATTERY,MANGAN	R6P(AR)XICI
⚠ **CD501**	**1209615904**	**CORD,AC BUSH**	**9615904**
CD801	WCL6836038	FLAT CABLE AWM2468 AWG26	5C GRAY 360MM
CD802	WDL6046038	FLAT CABLE AWM2468 AWG26	6C BLACK 460MM
CD803	06CH823004	CORD,CONNECTOR	CH823004
CP101	069S270639	CONNECTOR PCB SIDE	A2001WR2-7P
⚠ **CP401**	**069S450089**	**CONNECTOR PCB SIDE**	**A1561WV2-A5P**
CP402	069W01001A	CONNECTOR PCB SIDE	003P-2100
⚠ **CP501**	**069S320419**	**CONNECTOR PCB SIDE**	**A3963WV2-3PD**
⚠ **CP502**	**069S420110**	**CONNECTOR PCB SIDE**	**A1561WV2-2P**
⚠ **CP503**	**069W01001A**	**CONNECTOR PCB SIDE**	**003P-2100**
CP803	069S320010	CONNECTOR PCB SIDE	A2361WV2-2P
CP806	069W010010	CONNECTOR PCB SIDE	005P-2100
CD1001	06C3146804	CORD,CONNECTOR	C3146804
CP1001	069S140419	CONNECTOR PCB SIDE	A2502WV2-4P
CP801A	067U005049	WIRE HOLDER	B2013H02-5P
CP801B	067U005049	WIRE HOLDER	B2013H02-5P
CP802A	067U006049	WIRE HOLDER	B2013H02-6P
CP802B	067U006049	WIRE HOLDER	B2013H02-6P
EL0701	124116281A	EYE LET	XRY16X28BD
EL0702	124120301A	EYE LET	XRY20X30BD
⚠ **F501**	**081PC6R305**	**FUSE**	**51MS063L**
⚠ **FB401**	**043220060F**	**TRANSFORMER,FLYBACK**	**FJN20A002_M**
FH501	06710T0009	HOLDER,FUSE	EYF-52BCY
FH502	06710T0009	HOLDER,FUSE	EYF-52BCY
OS101	0773071005	REMOTE RECEIVER	RPM7137-WH5
⚠ **RY501**	**0560X20118**	**RELAY**	**G5PA-1-SA(WEC)**
⚠ **SP1001**	**070W457007**	**SPEAKER**	**MSF-2D5D10W**
⚠ **SP1002**	**070W457007**	**SPEAKER**	**MSF-2D5D10W**
⚠ **TH501**	**D8EE0B1400**	**DEGAUSS ELEMENT**	**B59203-S1060-B14**
TM101	076G0LH010	TRANSMITTER	EUR7613ZB0R
⚠ **TU001**	**0163100017**	**RF UNIT**	**ENG36A29GF**
⚠ **V801**	**0981210456**	**CRT W/DY**	**A51LYZ095X80**
X101	100CT8R005	CRYSTAL	HC-49/U-S
X602	100CT3R505	CRYSTAL	HC-49/U

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

CC..... CERAMIC CAPACITOR
CE..... ALUMI ELECTROLYTIC CAPACITOR
CP..... POLYESTER CAPACITOR
CPP..... POLYPROPYLENE CAPACITOR
CPL..... PLASTIC CAPACITOR
CMP..... METAL POLYESTER CAPACITOR
CMPL..... METAL PLASTIC CAPACITOR
CMPP..... METAL POLYPROPYLENE CAPACITOR

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